



## EMC TEST REPORT

Test Report No. : KES-EM-22T0309  
Date of Issue : Apr. 04, 2022  
Product name : THERMAL CAMERA  
Model/Type No. : TNM-C4940TD  
Variant Model : -  
Applicant : Hanwha Techwin Co., Ltd.  
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,  
Gyeonggi-do, Republic of Korea  
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.  
2. D-TECH CO.,LTD.  
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,  
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam  
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,  
Korea (Suwon Industrial Complex)  
Equipment authorization : **Supplier's Declaration of Conformity**  
Date of Receipt : Mar. 11, 2022  
Test date : Mar. 16, 2022 ~ Mar. 17, 2022  
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Ki Man, Kim  
EMC Test Engineer

Reviewed by

Dong-Hun, Jang  
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

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**REPORT REVISION HISTORY**

| Date          | Test Report No. | Revision History |
|---------------|-----------------|------------------|
| Apr. 04, 2022 | KES-EM-22T0309  | Issued           |
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## 1.0 General Product Description

### Main Specifications of EUT are:

| Spec Display Name           | Thermal                                                                                                                    | Visible                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video                       |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Imaging Device              | Uncooled micro bolometer                                                                                                   | 1/1.8" CMOS                                                                                                                                                                                                                                                                                                                                                                                                          |
| Resolution                  | 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360                                         | 3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360                                                                                                                                                                                                                                |
| Max. Framerate              | H.265/H.264: Max. 30fps<br>MJPEG: Max. 3fps                                                                                | H.265/H.264: Max. 30fps/25fps(60Hz/50Hz)<br>MJPEG: Max. 1fps/1fps(60Hz/50Hz)                                                                                                                                                                                                                                                                                                                                         |
| NETD                        | < 60mK                                                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pixel Size                  | 12μm                                                                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Min. Illumination           | None                                                                                                                       | Color: 0.06Lux(F1.3, 1/30sec)<br>BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)                                                                                                                                                                                                                                                                                                                                        |
| Video Out                   | USB : Micro USB Type B                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Lens                        |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Focal Length (Zoom Ratio)   | 9.1mm fixed focal                                                                                                          | 4.4~9.3mm(2.2x) motorized varifocal                                                                                                                                                                                                                                                                                                                                                                                  |
| Max. Aperture Ratio         | F1.0                                                                                                                       | F1.3(Wide)~F2.15(Tele)                                                                                                                                                                                                                                                                                                                                                                                               |
| Angular Field of View       | H: 50.0°, V: 37.0°, D: 63.8°                                                                                               | H:112.1°(Wide)~47.5°(Tele) /<br>V:58.0°(Wide)~26.6°(Tele) /<br>D:137.5°(Wide)~54.6°(Tele)                                                                                                                                                                                                                                                                                                                            |
| Min. Object Distance        | 3.5m(11.48ft)                                                                                                              | Wide: 1.75m(5.74ft) / Tele: 5.21m(17.09ft)                                                                                                                                                                                                                                                                                                                                                                           |
| Focus Control               | Fixed                                                                                                                      | Simple focus                                                                                                                                                                                                                                                                                                                                                                                                         |
| Lens Type                   | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mount Type                  | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Optional Lens               | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pan / Tilt / Rotate         |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pan / Tilt / Rotate Range   | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pan Range                   | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pan Speed                   | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Tilt Range                  | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Tilt Speed                  | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Rotate Range                | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sequence                    | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Preset Accuracy             | None                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Operational                 |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Camera Title                | Displayed up to 85 characters                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Direction Indicator         | None                                                                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Day & Night                 | None                                                                                                                       | Auto(ICR)                                                                                                                                                                                                                                                                                                                                                                                                            |
| Backlight Compensation      | None                                                                                                                       | BLC, WDR, SDR                                                                                                                                                                                                                                                                                                                                                                                                        |
| Wide Dynamic Range          | None                                                                                                                       | WDR(120dB)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Digital Noise Reduction     | None                                                                                                                       | SSNR V, WiseNR II                                                                                                                                                                                                                                                                                                                                                                                                    |
| Digital Image Stabilization | None                                                                                                                       | Support(built-in gyro sensor)                                                                                                                                                                                                                                                                                                                                                                                        |
| Defog                       | None                                                                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Motion Detection            | 8ea, polygonal zones                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Privacy Masking             | 6ea, rectangle zones<br>- Color: Gray/Black/White                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Gain Control                | None                                                                                                                       | Low / Middle / High                                                                                                                                                                                                                                                                                                                                                                                                  |
| White Balance               | None                                                                                                                       | ATW / AWC / Manual / Indoor / Outdoor                                                                                                                                                                                                                                                                                                                                                                                |
| LDC                         | None                                                                                                                       | Support                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electronic Shutter Speed    | None                                                                                                                       | Minimum / Maximum / Anti flicker(1/5~1/12,000sec)<br>Auto prefer shutter control(Based on AI engine)                                                                                                                                                                                                                                                                                                                 |
| Analytics                   | - Analytics events :<br>Directional detection, Motion detection, Enter/Exit,<br>Virtual line, Temperature Change detection | - Analytics events based on AI engine(NPU) : Object<br>detection<br>(Person/Face/Vehicle(car/truck/bus/bicycle/motorcycle)/License plate), Bestshot, IVA (Virtual line/Area,<br>Enter/Exit, Loitering, direction, intrusion), Stopped<br>vehicle, Traffic jam<br>- Analytics events : Defocus detection, Motion<br>detection, Tampering, Audio detection, Sound<br>classification, Shock detection, Appear/Disappear |
| Business Intelligence       | None                                                                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Alarm I/O                   | 4 configurable I/O ports                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Alarm Triggers              | Analytics, Network disconnect, Alarm input                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|                                       |                                                                                                                                                                                                                                                                                                       |                                                |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Alarm Events                          | When alarm trigger occurred<br>- File upload(image) : e-mail/FTP<br>- Notification : e-mail<br>- Recording : SD/SDHC/SDXC or NAS recording at event triggers<br>- Alarm output<br>- Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)<br>- Audio clip playback                                     |                                                |
| Audio In                              | Selectable(mic in/line in)<br>Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm                                                                                                                                                                                                                    |                                                |
| Audio Out                             | Line out, Max.output level: 1Vrms                                                                                                                                                                                                                                                                     |                                                |
| IR Viewable Length                    | None                                                                                                                                                                                                                                                                                                  | 30m                                            |
| Color Palettes                        | Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom                                                                                                                                                                                                                                       | None                                           |
| <b>Network</b>                        |                                                                                                                                                                                                                                                                                                       |                                                |
| Ethernet                              | Metal shielded RJ-45(10/100/1000BASE-T)                                                                                                                                                                                                                                                               |                                                |
| Video Compression                     | H.265/H.264: Main/High, MJPEG                                                                                                                                                                                                                                                                         |                                                |
| Audio Compression                     | G.711 u-law / G.726 Selectable<br>G.726(ADPCM) 8KHz, G.711 8KHz<br>G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps<br>AAC-LC: 48Kbps at 16KHz                                                                                                                                                                   |                                                |
| Smart Codec                           | WiseStreamII                                                                                                                                                                                                                                                                                          | Manual(Sea area), WiseStreamIII                |
| Video Quality Adjustment              | H.264/H.265: Target bitrate level control<br>MJPEG: Target bitrate level control                                                                                                                                                                                                                      |                                                |
| Bitrate Control                       | H.264/H.265: CBR or VBR<br>MJPEG: VBR                                                                                                                                                                                                                                                                 |                                                |
| Streaming                             | Unicast(6 users) / Multicast<br>Multiple streaming(Up to 3 profiles)                                                                                                                                                                                                                                  |                                                |
| Protocol                              | IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)                                                                                            |                                                |
| Security                              | TPM 2.0 (FIPS 140-2 level 2)<br>HTTPS(SSL) login authentication<br>Digest login authentication<br>IP address filtering<br>User access log<br>802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)<br>Device certificate(Hanwha Techwin Root CA, pre-installed)<br>Secure boot, Secure firmware |                                                |
| Application Programming Interface     | ONVIF Profile S/T<br>SUNAPI(HTTP API)<br>Wisenet open platform (visible channel only)                                                                                                                                                                                                                 |                                                |
| <b>General</b>                        |                                                                                                                                                                                                                                                                                                       |                                                |
| Webpage Language                      | English, French, German, Spanish, Italian, Chinese, Korean, Russian, Swedish, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek                                                                                                                                                   |                                                |
| Edge Storage                          | Micro SD/SDHC/SDXC 2slots 512GB                                                                                                                                                                                                                                                                       |                                                |
| Memory                                | 4GB RAM, 512MB FLASH                                                                                                                                                                                                                                                                                  |                                                |
| <b>Environmental &amp; Electrical</b> |                                                                                                                                                                                                                                                                                                       |                                                |
| Operating Temperature / Humidity      | -40°C to +60°C(-58°F to +140°F)<br>* Start up should be done at above -30°C<br>less than 95% RH(non-condensing)                                                                                                                                                                                       |                                                |
| Storage Temperature / Humidity        | -50°C to +60°C(-58°F to +140°F) / Less than 95% RH(Non-condensing)                                                                                                                                                                                                                                    |                                                |
| Certification                         | IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)                                                                                                                                                                                                                                                      |                                                |
| Input Voltage                         | PoE+(IEEE802.3at, Class4), 12V <sub>DC</sub>                                                                                                                                                                                                                                                          |                                                |
| Power Consumption                     | PoE+ : Max 25.5W<br>12V <sub>DC</sub> : Max 21.5W                                                                                                                                                                                                                                                     |                                                |
| <b>Mechanical</b>                     |                                                                                                                                                                                                                                                                                                       |                                                |
| Color / Material                      | White / Aluminum                                                                                                                                                                                                                                                                                      |                                                |
| RAL Code                              | RAL9003                                                                                                                                                                                                                                                                                               |                                                |
| Product Dimensions / Weight           | 353.4 * 287.5 * 191.2mm (13.92 * 11.32 * 7.53in) / 4.533kg                                                                                                                                                                                                                                            |                                                |
| <b>DORI (EN62676-4 standard)</b>      |                                                                                                                                                                                                                                                                                                       |                                                |
| Detect (25PPM/ 8PPF)                  | None                                                                                                                                                                                                                                                                                                  | Wide: 51.7m(169.94ft) / Tele: 174.5m(572.64ft) |
| Observe (63PPM/ 19PPF)                | None                                                                                                                                                                                                                                                                                                  | Wide: 20.7m(67.85ft) / Tele: 69.8m(229.06ft)   |
| Recognize (125PPM/ 38PPF)             | None                                                                                                                                                                                                                                                                                                  | Wide: 10.3m(33.93ft) / Tele: 34.9m(114.53ft)   |
| Identify (250PPM/ 76PPF)              | None                                                                                                                                                                                                                                                                                                  | Wide: 5.2m(16.96ft) / Tele: 17.5m(57.26ft)     |

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## 1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

- ☒ AC 120 V, 60 Hz (AC/DC Adapter Input Power)
- ☒ AC 120 V, 60 Hz (PoE Adapter Input Power)

## 1.2 Variant Model Differences

Not applicable

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

| Description    | Model Number | Serial Number | Manufacturer                                   | Remarks |
|----------------|--------------|---------------|------------------------------------------------|---------|
| THERMAL CAMERA | TNM-C4940TD  | -             | HANWHA TECHWIN<br>SECURITY VIETNAM<br>CO.,LTD. | EUT     |

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## 1.5 Support Equipments

| Description      | Model Number      | Serial Number | Manufacturer                                  | Remarks |
|------------------|-------------------|---------------|-----------------------------------------------|---------|
| Adaptor          | 2ACB022F          | -             | Channel Well Technology (Guangzhou) Co., Ltd. | -       |
| PoE Adaptor      | PT-PSE106GBR-AH-S | -             | Dongguan PROCET Network Technology Co., Ltd   | -       |
| Notebook         | Latitude 5300     | 8C47BE45C060  | DELL INC.                                     | -       |
| Notebook Adaptor | HA65NM130         | -             | Chicony Power Technology(Suzhou) Co.,Ltd.     | -       |
| MIC              | MP1000            | -             | -                                             | -       |
| Headset          | K550              | -             | Britz®                                        | -       |
| Alarm1           | -                 | -             | -                                             | -       |
| Alarm2           | -                 | -             | -                                             | -       |
| Alarm3           | -                 | -             | -                                             | -       |
| Alarm4           | -                 | -             | -                                             | -       |
| USB LAN Ccard    | U2500             | -             | ipTIME                                        | -       |
| Micro SD Card1   | -                 | -             | SanDisk                                       | 32 GB   |
| Micro SD Card2   | -                 | -             | SanDisk                                       | 32 GB   |

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## 1.6 External I/O Cabling

### ■ DC Mode

| Start                   |          | END                 |          | Cable Spec. |        |
|-------------------------|----------|---------------------|----------|-------------|--------|
| Description             | I/O Port | Description         | I/O Port | Length      | Shield |
| THERMAL CAMERA<br>(EUT) | 2 Pin    | Adaptor             | 2 Pin    | 1.2         | U      |
|                         | RJ-45    | USB LAN Card        | RJ-45    | 3.0         | S      |
|                         | 3.5 mm   | Headset             | 3.5 mm   | 1.7         | U      |
|                         | 3.5 mm   |                     | 3.5 mm   | 1.7         | U      |
|                         | SLOT     | Micro SD Card1      | SLOT     | -           | -      |
|                         | SLOT     | Micro SD Card2      | SLOT     | -           | -      |
|                         | 2 Pin    | Alarm1              | 2 Pin    | 3.0         | U      |
|                         | 2 Pin    | Alarm2              | 2 Pin    | 3.0         | U      |
|                         | 2 Pin    | Alarm3              | 2 Pin    | 3.0         | U      |
|                         | 2 Pin    | Alarm4              | 2 Pin    | 3.0         | U      |
| Notebook                | DC Jack  | Notebook<br>Adaptor | DC Jack  | 1.2         | U      |
|                         | 3.5 mm   | MIC                 | 3.5 mm   | 1.7         | U      |
|                         | USB      | USB LAN Card        | USB      | 0.1         | S      |

\* Unshielded=U, Shielded=S



■ PoE Mode

| Start                |             | END              |             | Cable Spec. |        |
|----------------------|-------------|------------------|-------------|-------------|--------|
| Description          | I/O Port    | Description      | I/O Port    | Length      | Shield |
| THERMAL CAMERA (EUT) | RJ-45 (PoE) | PoE Adaptor      | RJ-45 (PoE) | 3.0         | S      |
|                      | 3.5 mm      | Headset          | 3.5 mm      | 1.7         | U      |
|                      | 3.5 mm      |                  | 3.5 mm      | 1.7         | U      |
|                      | SLOT        | Micro SD Card1   | SLOT        | -           | -      |
|                      | SLOT        | Micro SD Card2   | SLOT        | -           | -      |
|                      | 2 Pin       | Alarm1           | 2 Pin       | 3.0         | U      |
|                      | 2 Pin       | Alarm2           | 2 Pin       | 3.0         | U      |
|                      | 2 Pin       | Alarm3           | 2 Pin       | 3.0         | U      |
|                      | 2 Pin       | Alarm4           | 2 Pin       | 3.0         | U      |
| Notebook             | DC Jack     | Notebook Adaptor | DC Jack     | 1.2         | U      |
|                      | 3.5 mm      | MIC              | 3.5 mm      | 1.7         | U      |
|                      | USB         | USB LAN Card     | USB         | 0.1         | S      |
| PoE Adaptor          | RJ-45 (LAN) | USB LAN Card     | RJ-45 (LAN) | 3.0         | S      |

\* Unshielded=U, Shielded=S

## 1.7 EUT Operating Mode(s)

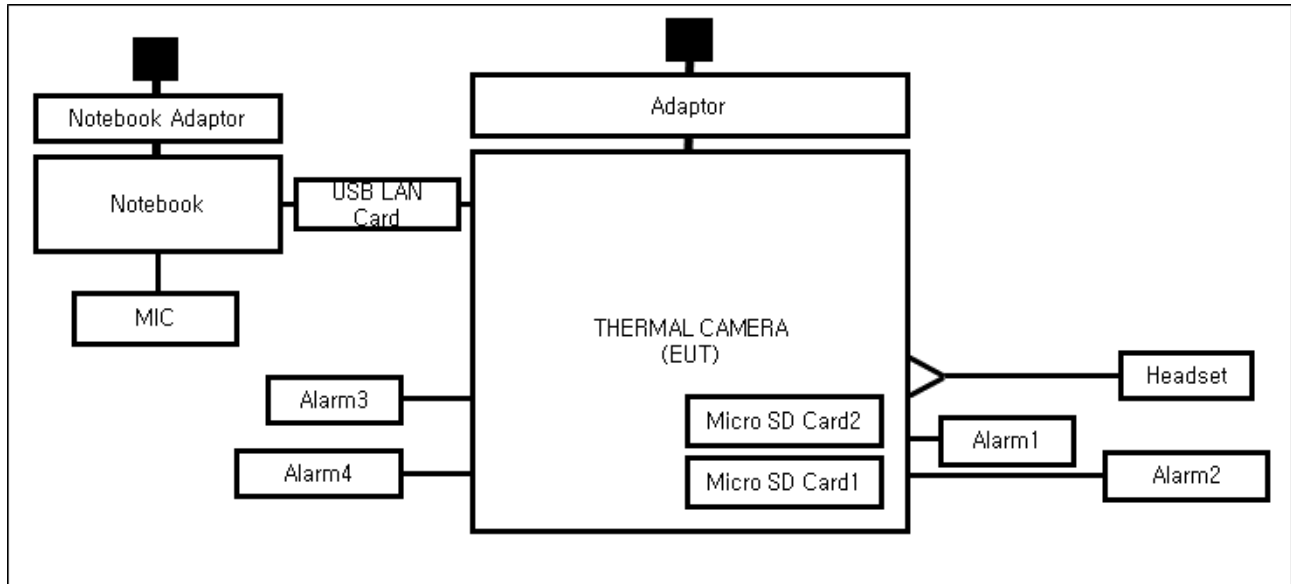
| operating                                                                                                   |
|-------------------------------------------------------------------------------------------------------------|
| EUT Monitoring, Ping Test After the test, the Micro SD Card was checked to see if it was recorded normally. |

| EUT Test operating S/W |         |                          |
|------------------------|---------|--------------------------|
| Name                   | Version | Manufacture Company      |
| Web Viewer             | -       | Hanwha Techwin Co., Ltd. |

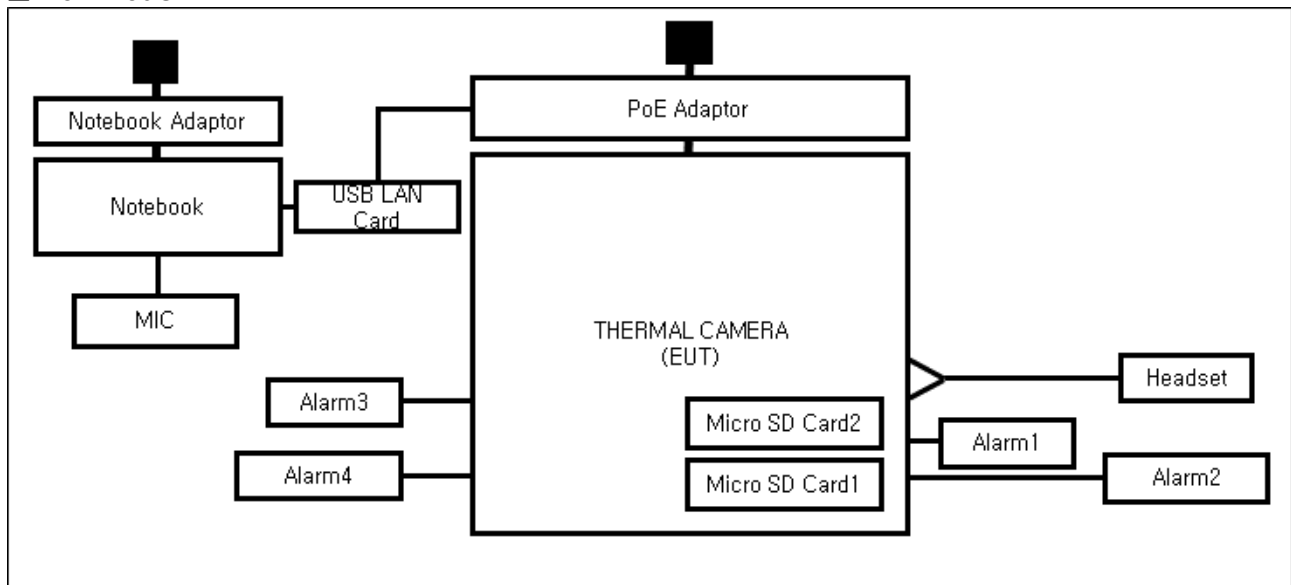
## 1.8 Configuration

■ AC Main  
 □ DC Main

### ■ DC Mode



### ■ PoE Mode



## 1.9 Remarks when standards applied

USB port is not tested because it is an unused port.

## 1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

## 1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

## 1.12 Laboratory Accreditations and Listings

| Country       | Agency  | Scope of Accreditation                                                                                                                                                                         | Logo                                                                                                                           |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| KOREA         | RRA     | EMI (3 m & 10 m Semi-Anechoic Chamber ,<br>10 m Open Area and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                 | <br>KR0100                                  |
| International | KOLAS   | EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                                   | <br>KT489                                 |
| USA           | FCC     | 3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.                                                                               | <br>KR0100                                |
| Canada        | ISED    | 3 m & 10 m Semi-Anechoic Chamber and Conducted test site                                                                                                                                       | <br>23298-1                               |
| JAPAN         | VCCI    | Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz | <br>R-20056, C-20036,<br>T-20040, G-20057 |
| Europe        | TÜV SÜD | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site)<br>EMS (ESD, RS, EFT/Burst, Surge, CS,<br>Magnetic, Dips and interruptions)                                    | <br>CARAT 001633 0004                     |



## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B



## 2.1 Conducted Emissions at Mains Power Ports

### Test Date

Mar. 16, 2022

### Test Location

Electro wave Shieldroom #6

### Test Equipment

| Used                                | Description       | Model Number | Manufacturer | Serial Number | Cal. Due     |
|-------------------------------------|-------------------|--------------|--------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W      | EMC32        | R & S        | 9.12.00       | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESR3         | R & S        | 101783        | 12, 28, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ENV216       | R & S        | 101787        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | LISN              | ESH2-Z5      | R & S        | 100450        | 12, 27, 2022 |
| <input checked="" type="checkbox"/> | PULSE LIMITER     | ESH3-Z2      | R & S        | 101915        | 12, 27, 2022 |

### Test Conditions

Temperature: (24,4 ± 0,1) °C

Relative Humidity: (43,8 ± 0,1) % R.H.

### Frequency Range of Measurement

150 kHz to 30 MHz

### Instrument Settings

IF Band Width: 9 kHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## 2.2 Radiated Electric Field Emissions(Below 1 GHz)

### Test Date

Mar. 16, 2022

### Test Location

☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

### Test Equipment

| Used                                | Description              | Model Number | Manufacturer     | Serial Number | Cal. Due     |
|-------------------------------------|--------------------------|--------------|------------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W             | EP5/RE       | TOYO Corporation | 6.0.0         | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER        | ESU26        | R & S            | 100551        | 03, 31, 2023 |
| <input checked="" type="checkbox"/> | AMPLIFIER                | SCU 01       | R & S            | 100603        | 11, 24, 2022 |
| <input checked="" type="checkbox"/> | TRILOG-BROADBAND ANTENNA | VULB9163     | Schwarzbeck      | 715           | 12, 08, 2022 |
| <input checked="" type="checkbox"/> | ATTENUATOR               | 8491A        | HP               | 32173         | 03, 08, 2023 |

### Test Conditions

Temperature: (24,0 ± 0,2) °C  
Relative Humidity: (43,9 ± 0,4) % R.H.

### Frequency Range of Measurement

30 MHz to 1 GHz

### Instrument Settings

IF Band Width: 120 kHz

### Test Results

The requirements are:

☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## 2.3 Radiated Electric Field Emissions(Above 1 GHz)

### Test Date

Mar. 17, 2022

### Test Location

SEMI ANECHOIC CHAMBER #5

### Test Equipment

| Used                                | Description       | Model Number | Manufacturer     | Serial Number | Cal. Due     |
|-------------------------------------|-------------------|--------------|------------------|---------------|--------------|
| <input checked="" type="checkbox"/> | EMI Test S/W      | EP5/RE       | TOYO Corporation | 6.0.120       | -            |
| <input checked="" type="checkbox"/> | EMI TEST RECEIVER | ESU26        | Rohde & Schwarz  | 100552        | 03, 31, 2023 |
| <input checked="" type="checkbox"/> | HORN ANTENNA      | BBHA 9120D   | SCHWARZBECK      | 9120D-1802    | 12, 16, 2022 |
| <input checked="" type="checkbox"/> | PREAMPLIFIER      | 8449B        | HP               | 3008A00538    | 06, 21, 2022 |

### Test Conditions

Temperature: (24,7 ± 0,2) °C

Relative Humidity: (43,9 ± 0,4) % R.H.

### Frequency Range of Measurement

1 GHz to 5 GHz

### Instrument Settings

IF Band Width: 1 MHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## APPENDIX A – TEST DATA

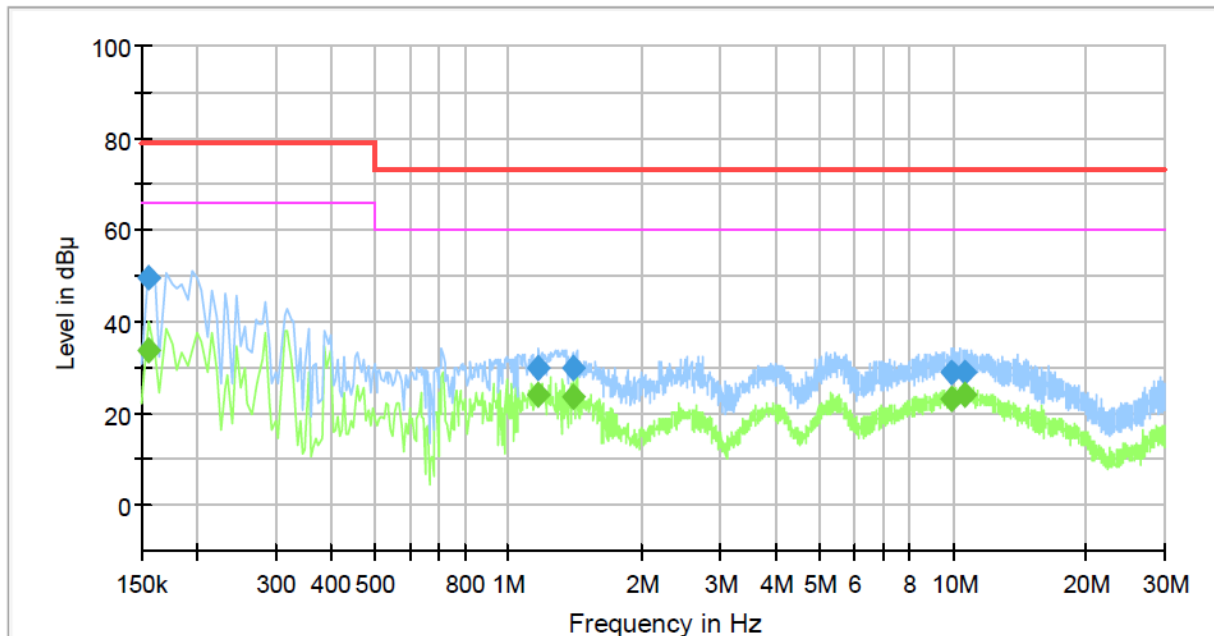
### Conducted Emissions at Mains Power Ports

■ DC Mode

HOT LINE

### Common Information

|                   |                    |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.:        | TNM-C4940TD        |
| Phase:            | L1                 |
| Mode:             | DC                 |
| Operator Name:    | KES                |



### Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 33.82           | 66.00        | 32.18       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.155000        | 49.80            | ---             | 79.00        | 29.20       | 1000.0          | 9.000           | L1   | 19.4       |
| 1.170000        | ---              | 24.05           | 60.00        | 35.95       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.170000        | 29.85            | ---             | 73.00        | 43.15       | 1000.0          | 9.000           | L1   | 20.1       |
| 1.405000        | ---              | 23.43           | 60.00        | 36.57       | 1000.0          | 9.000           | L1   | 20.2       |
| 1.405000        | 30.06            | ---             | 73.00        | 42.94       | 1000.0          | 9.000           | L1   | 20.2       |
| 9.950000        | ---              | 23.36           | 60.00        | 36.64       | 1000.0          | 9.000           | L1   | 19.8       |
| 9.950000        | 28.70            | ---             | 73.00        | 44.30       | 1000.0          | 9.000           | L1   | 19.8       |
| 10.585000       | ---              | 24.00           | 60.00        | 36.00       | 1000.0          | 9.000           | L1   | 19.9       |
| 10.585000       | 29.11            | ---             | 73.00        | 43.89       | 1000.0          | 9.000           | L1   | 19.9       |

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Report No.:

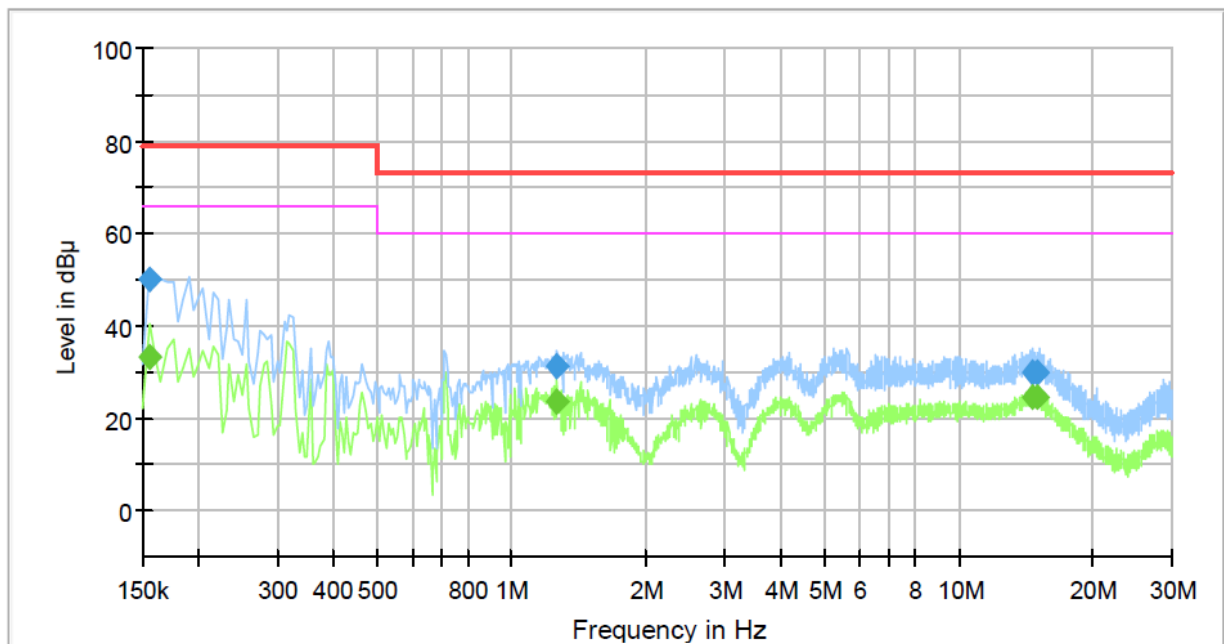
KES-EM-22T0309

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### NEUTRAL LINE

## Common Information

Test Description: Conducted Emission  
Model No.: TNM-C4940TD  
Phase: N  
Mode: DC  
Operator Name: KES



## Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 33.41           | 66.00        | 32.59       | 1000.0          | 9.000           | N    | 19.4       |
| 0.155000        | 50.06            | ---             | 79.00        | 28.94       | 1000.0          | 9.000           | N    | 19.4       |
| 1.270000        | ---              | 23.45           | 60.00        | 36.55       | 1000.0          | 9.000           | N    | 20.1       |
| 1.270000        | 31.47            | ---             | 73.00        | 41.53       | 1000.0          | 9.000           | N    | 20.1       |
| 14.560000       | ---              | 24.69           | 60.00        | 35.31       | 1000.0          | 9.000           | N    | 19.9       |
| 14.560000       | 29.84            | ---             | 73.00        | 43.16       | 1000.0          | 9.000           | N    | 19.9       |
| 14.970000       | ---              | 24.75           | 60.00        | 35.25       | 1000.0          | 9.000           | N    | 19.9       |
| 14.970000       | 30.01            | ---             | 73.00        | 42.99       | 1000.0          | 9.000           | N    | 19.9       |

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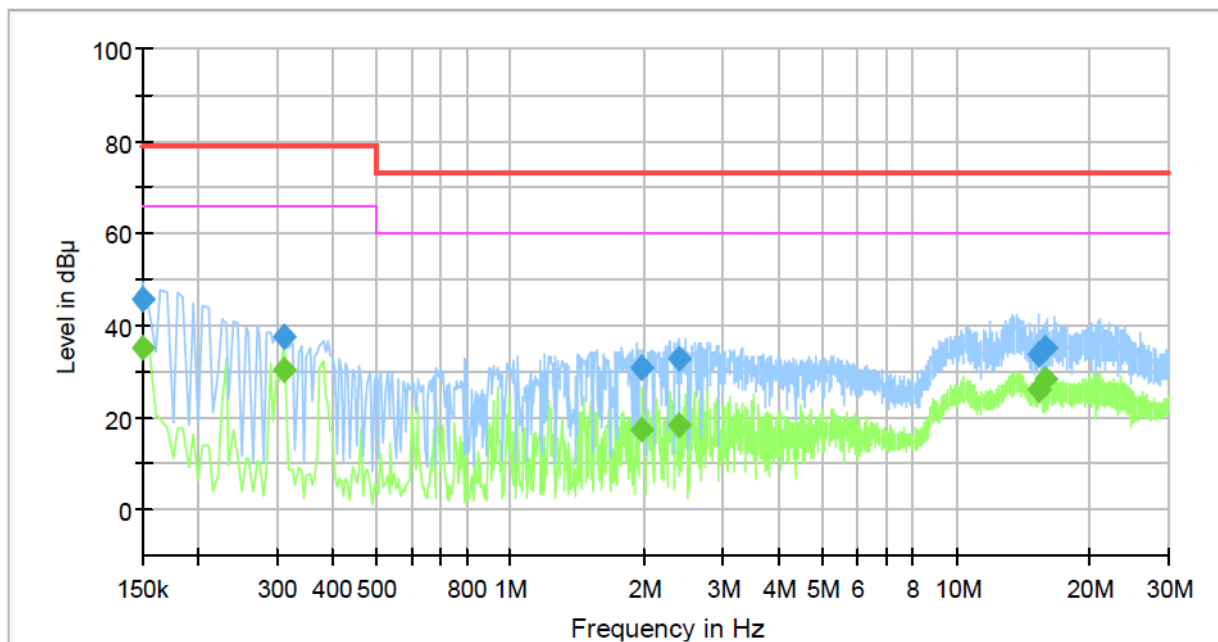
Report No.:  
KES-EM-22T0309  
Page (18) of (46)

### ■ PoE Mode

### HOT LINE

## Common Information

Test Description: Conducted Emission  
Model No.: TNM-C4940TD  
Phase: L1  
Mode: PoE  
Operator Name: KES



## Final Result

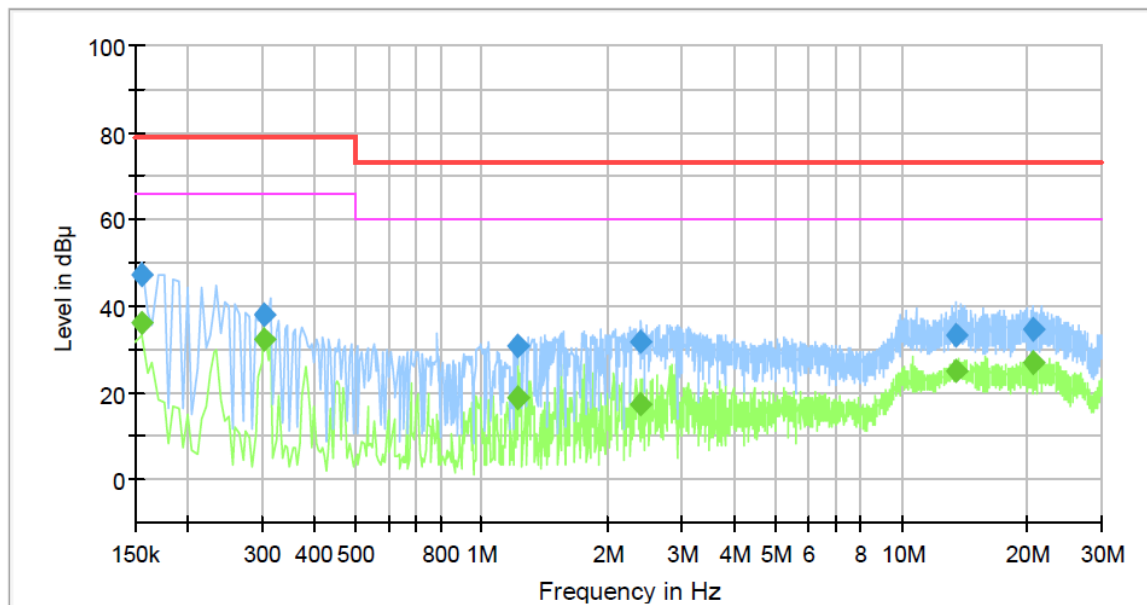
| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.150000        | ---              | 34.96           | 66.00        | 31.04       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.150000        | 45.49            | ---             | 79.00        | 33.51       | 1000.0          | 9.000           | L1   | 19.4       |
| 0.310000        | ---              | 30.21           | 66.00        | 35.79       | 1000.0          | 9.000           | L1   | 19.5       |
| 0.310000        | 37.35            | ---             | 79.00        | 41.65       | 1000.0          | 9.000           | L1   | 19.5       |
| 1.965000        | ---              | 17.27           | 60.00        | 42.73       | 1000.0          | 9.000           | L1   | 20.3       |
| 1.965000        | 30.64            | ---             | 73.00        | 42.36       | 1000.0          | 9.000           | L1   | 20.3       |
| 2.400000        | ---              | 18.29           | 60.00        | 41.71       | 1000.0          | 9.000           | L1   | 20.3       |
| 2.400000        | 32.63            | ---             | 73.00        | 40.37       | 1000.0          | 9.000           | L1   | 20.3       |
| 15.345000       | ---              | 25.91           | 60.00        | 34.09       | 1000.0          | 9.000           | L1   | 19.9       |
| 15.345000       | 33.90            | ---             | 73.00        | 39.10       | 1000.0          | 9.000           | L1   | 19.9       |
| 15.870000       | ---              | 28.46           | 60.00        | 31.54       | 1000.0          | 9.000           | L1   | 19.9       |
| 15.870000       | 35.37            | ---             | 73.00        | 37.63       | 1000.0          | 9.000           | L1   | 19.9       |

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## NEUTRAL LINE

### Common Information

|                   |                    |
|-------------------|--------------------|
| Test Description: | Conducted Emission |
| Model No.:        | TNM-C4940TD        |
| Phase:            | N                  |
| Mode:             | PoE                |
| Operator Name:    | KES                |



### Final Result

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|-----------------|-----------------|------|------------|
| 0.155000        | ---              | 36.02           | 66.00        | 29.98       | 1000.0          | 9.000           | N    | 19.4       |
| 0.155000        | 47.18            | ---             | 79.00        | 31.82       | 1000.0          | 9.000           | N    | 19.4       |
| 0.305000        | ---              | 32.50           | 66.00        | 33.50       | 1000.0          | 9.000           | N    | 19.5       |
| 0.305000        | 37.87            | ---             | 79.00        | 41.13       | 1000.0          | 9.000           | N    | 19.5       |
| 1.225000        | ---              | 18.98           | 60.00        | 41.02       | 1000.0          | 9.000           | N    | 20.1       |
| 1.225000        | 30.74            | ---             | 73.00        | 42.26       | 1000.0          | 9.000           | N    | 20.1       |
| 2.400000        | ---              | 17.49           | 60.00        | 42.51       | 1000.0          | 9.000           | N    | 20.3       |
| 2.400000        | 31.71            | ---             | 73.00        | 41.29       | 1000.0          | 9.000           | N    | 20.3       |
| 13.560000       | ---              | 24.87           | 60.00        | 35.13       | 1000.0          | 9.000           | N    | 19.9       |
| 13.560000       | 33.06            | ---             | 73.00        | 39.94       | 1000.0          | 9.000           | N    | 19.9       |
| 20.600000       | ---              | 26.93           | 60.00        | 33.07       | 1000.0          | 9.000           | N    | 20.2       |
| 20.600000       | 34.48            | ---             | 73.00        | 38.52       | 1000.0          | 9.000           | N    | 20.2       |

#### ◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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Report No.:

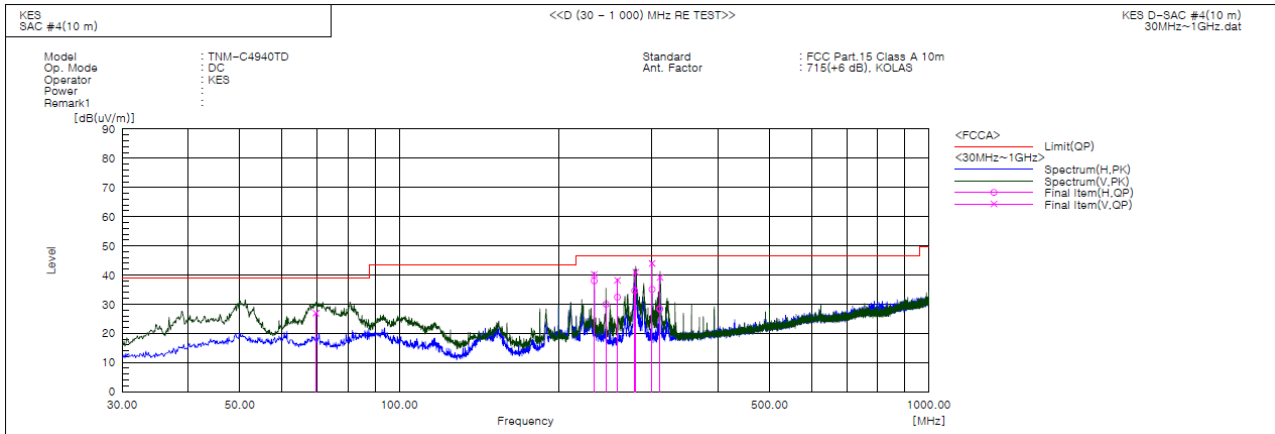
KES-EM-22T0309

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## Radiated Electric Field Emissions(Below 1 GHz)

- 47 CFR Part 15, Subpart B

### ■ DC Mode



### Final Result

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|--------|
| 1   | 69.649             | V   | 51.6                      | -24.7            | 26.9                       | 39.0                      | 12.1                 | 112.0          | 84.0           |        |
| 2   | 233.458            | H   | 57.9                      | -19.9            | 38.0                       | 46.5                      | 8.5                  | 368.0          | 268.0          |        |
| 3   | 233.463            | V   | 60.1                      | -19.9            | 40.2                       | 46.5                      | 6.3                  | 105.0          | 137.0          |        |
| 4   | 245.704            | H   | 49.4                      | -19.4            | 30.0                       | 46.5                      | 16.5                 | 256.0          | 275.0          |        |
| 5   | 258.071            | H   | 51.5                      | -19.1            | 32.4                       | 46.5                      | 14.1                 | 337.0          | 253.0          |        |
| 6   | 258.079            | V   | 57.3                      | -19.1            | 38.2                       | 46.5                      | 8.3                  | 121.0          | 182.0          |        |
| 7   | 278.199            | H   | 53.3                      | -18.7            | 34.6                       | 46.5                      | 11.9                 | 368.0          | 260.0          |        |
| 8   | 279.533            | V   | 59.7                      | -18.7            | 41.0                       | 46.5                      | 5.5                  | 178.0          | 190.0          |        |
| 9   | 300.024            | H   | 53.1                      | -18.0            | 35.1                       | 46.5                      | 11.4                 | 400.0          | 320.0          |        |
| 10  | 300.029            | V   | 62.0                      | -18.0            | 44.0                       | 46.5                      | 2.5                  | 100.0          | 168.0          |        |
| 11  | 310.451            | H   | 45.8                      | -17.4            | 28.4                       | 46.5                      | 18.1                 | 223.0          | 296.0          |        |
| 12  | 310.815            | V   | 56.6                      | -17.4            | 39.2                       | 46.5                      | 7.3                  | 100.0          | 160.0          |        |

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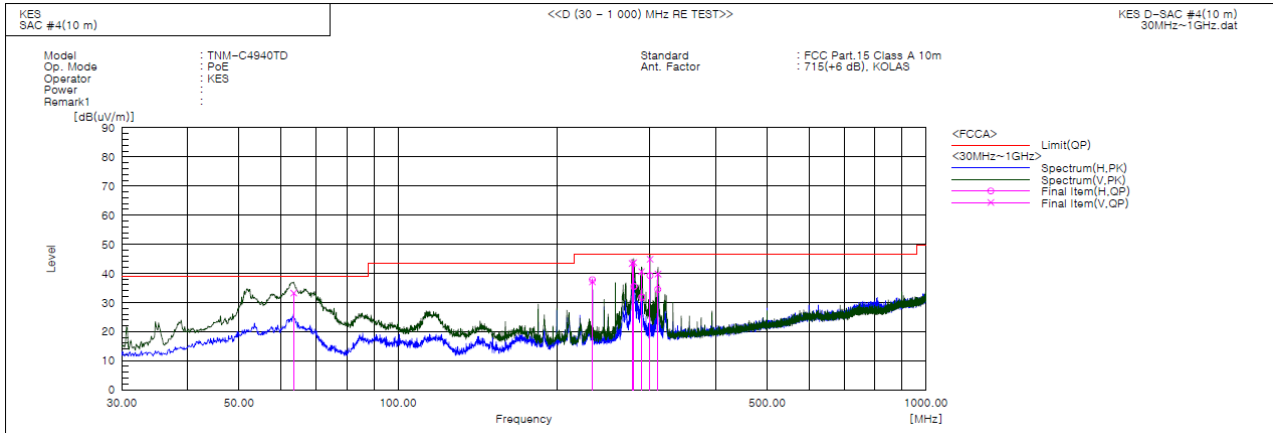


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Report No.:  
KES-EM-22T0309  
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### PoE Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 63.465          | V   | 56.0                | -22.8         | 33.2                 | 39.0                | 5.8            | 112.0       | 206.0       |        |
| 2   | 233.454         | H   | 57.7                | -19.9         | 37.8                 | 46.5                | 8.7            | 355.0       | 276.0       |        |
| 3   | 233.458         | V   | 57.0                | -19.9         | 37.1                 | 46.5                | 9.4            | 121.0       | 153.0       |        |
| 4   | 277.593         | V   | 62.1                | -18.7         | 43.4                 | 46.5                | 3.1            | 178.0       | 184.0       |        |
| 5   | 279.654         | V   | 62.4                | -18.7         | 43.7                 | 46.5                | 2.8            | 100.0       | 184.0       |        |
| 6   | 279.896         | H   | 54.1                | -18.6         | 35.5                 | 46.5                | 11.0           | 336.0       | 12.0        |        |
| 7   | 289.233         | V   | 59.0                | -18.4         | 40.6                 | 46.5                | 5.9            | 100.0       | 176.0       |        |
| 8   | 289.596         | H   | 50.2                | -18.4         | 31.8                 | 46.5                | 14.7           | 256.0       | 353.0       |        |
| 9   | 300.024         | H   | 57.2                | -18.0         | 39.2                 | 46.5                | 7.3            | 400.0       | 330.0       |        |
| 10  | 300.028         | V   | 62.9                | -18.0         | 44.9                 | 46.5                | 1.6            | 144.0       | 169.0       |        |
| 11  | 310.451         | H   | 51.9                | -17.4         | 34.5                 | 46.5                | 12.0           | 322.0       | 322.0       |        |
| 12  | 310.815         | V   | 57.2                | -17.4         | 39.8                 | 46.5                | 6.7            | 100.0       | 206.0       |        |

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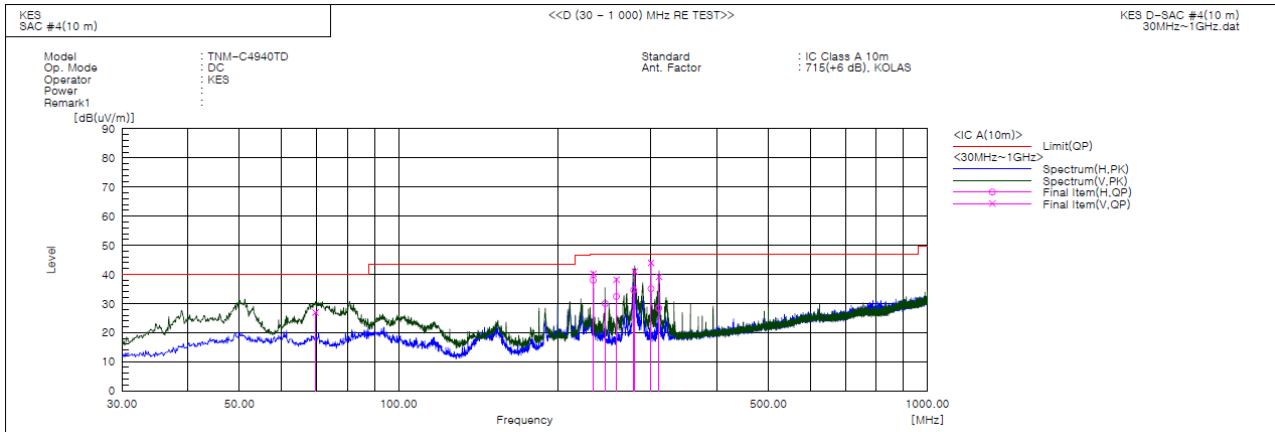


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Report No.:  
KES-EM-22T0309  
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## - IC Regulation ICES-003 Issue 7 ■ DC Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 69.649          | V   | 51.6                | -24.7         | 26.9                 | 40.0                | 13.1           | 112.0       | 84.0        |        |
| 2   | 233.458         | H   | 57.9                | -19.9         | 38.0                 | 47.0                | 9.0            | 368.0       | 268.0       |        |
| 3   | 233.463         | V   | 60.1                | -19.9         | 40.2                 | 47.0                | 6.8            | 105.0       | 137.0       |        |
| 4   | 245.704         | H   | 49.4                | -19.4         | 30.0                 | 47.0                | 17.0           | 256.0       | 275.0       |        |
| 5   | 258.071         | H   | 51.5                | -19.1         | 32.4                 | 47.0                | 14.6           | 337.0       | 253.0       |        |
| 6   | 258.079         | V   | 57.3                | -19.1         | 38.2                 | 47.0                | 8.8            | 121.0       | 182.0       |        |
| 7   | 278.199         | H   | 53.3                | -18.7         | 34.6                 | 47.0                | 12.4           | 368.0       | 260.0       |        |
| 8   | 279.533         | V   | 59.7                | -18.7         | 41.0                 | 47.0                | 6.0            | 178.0       | 190.0       |        |
| 9   | 300.024         | H   | 53.1                | -18.0         | 35.1                 | 47.0                | 11.9           | 400.0       | 320.0       |        |
| 10  | 300.029         | V   | 62.0                | -18.0         | 44.0                 | 47.0                | 3.0            | 100.0       | 168.0       |        |
| 11  | 310.451         | H   | 45.8                | -17.4         | 28.4                 | 47.0                | 18.6           | 223.0       | 296.0       |        |
| 12  | 310.815         | V   | 56.6                | -17.4         | 39.2                 | 47.0                | 7.8            | 100.0       | 160.0       |        |

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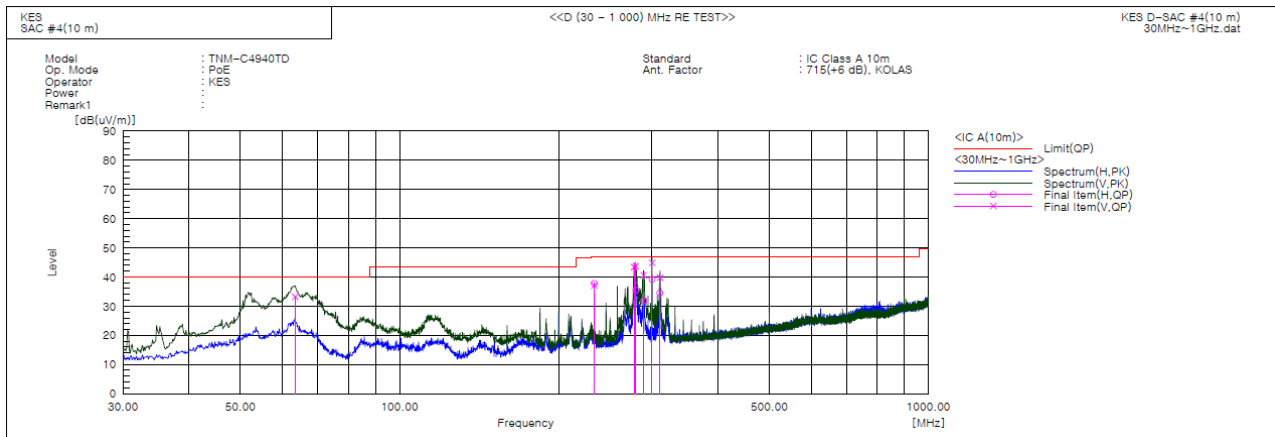


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### PoE Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|--------|
| 1   | 63.465          | V   | 56.0                | -22.8         | 33.2                 | 40.0                | 6.8            | 112.0       | 206.0       |        |
| 2   | 233.454         | H   | 57.7                | -19.9         | 37.8                 | 47.0                | 9.2            | 355.0       | 276.0       |        |
| 3   | 233.458         | V   | 57.0                | -19.9         | 37.1                 | 47.0                | 9.9            | 121.0       | 153.0       |        |
| 4   | 277.593         | V   | 62.1                | -18.7         | 43.4                 | 47.0                | 3.6            | 178.0       | 184.0       |        |
| 5   | 279.654         | V   | 62.4                | -18.7         | 43.7                 | 47.0                | 3.3            | 100.0       | 184.0       |        |
| 6   | 279.896         | H   | 54.1                | -18.6         | 35.5                 | 47.0                | 11.5           | 336.0       | 12.0        |        |
| 7   | 289.233         | V   | 59.0                | -18.4         | 40.6                 | 47.0                | 6.4            | 100.0       | 176.0       |        |
| 8   | 289.596         | H   | 50.2                | -18.4         | 31.8                 | 47.0                | 15.2           | 256.0       | 353.0       |        |
| 9   | 300.024         | H   | 57.2                | -18.0         | 39.2                 | 47.0                | 7.8            | 400.0       | 330.0       |        |
| 10  | 300.028         | V   | 62.9                | -18.0         | 44.9                 | 47.0                | 2.1            | 144.0       | 169.0       |        |
| 11  | 310.451         | H   | 51.9                | -17.4         | 34.5                 | 47.0                | 12.5           | 322.0       | 322.0       |        |
| 12  | 310.815         | V   | 57.2                | -17.4         | 39.8                 | 47.0                | 7.2            | 100.0       | 206.0       |        |

### ◆ Calculation - SAC #4(10 m)

Result(QP) [dB( $\mu$ V/m)] = (Reading(QP)[dB( $\mu$ V)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB( $\mu$ V/m)] - Result(QP) [dB( $\mu$ V/m)]

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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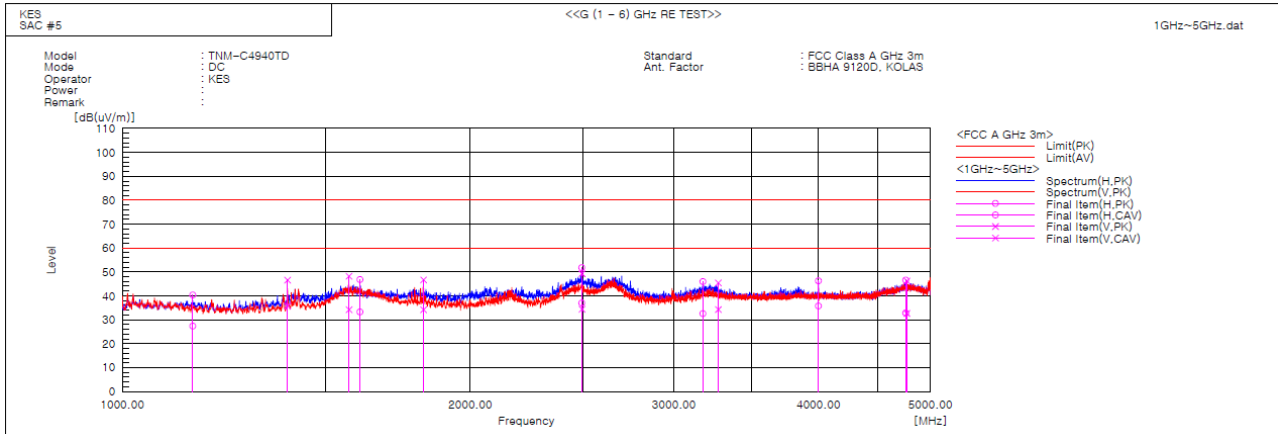
Report No.:

KES-EM-22T0309

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## Radiated Electric Field Emissions(Above 1 GHz)

### DC Mode



### Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|---------------------|----------------|-----------------|-------------|-------------|--------|
| 1   | 1150.625        | H   | 47.3                | 34.3                 | -6.9          | 40.4                 | 27.4                  | 80.0                | 60.0                | 39.6           | 32.6            | 112.0       | 112.2       |        |
| 2   | 1389.375        | V   | 51.9                | 41.1                 | -5.3          | 46.6                 | 35.8                  | 80.0                | 60.0                | 33.4           | 24.2            | 146.0       | 105.8       |        |
| 3   | 1570.625        | V   | 52.9                | 38.9                 | -4.7          | 48.2                 | 34.2                  | 80.0                | 60.0                | 31.8           | 25.8            | 366.0       | 238.2       |        |
| 4   | 1605.000        | H   | 51.4                | 37.9                 | -4.6          | 46.8                 | 33.3                  | 80.0                | 60.0                | 33.2           | 26.7            | 225.0       | 192.6       |        |
| 5   | 1821.875        | V   | 50.3                | 37.8                 | -3.6          | 46.7                 | 34.2                  | 80.0                | 60.0                | 33.3           | 25.8            | 121.0       | 112.7       |        |
| 6   | 2496.875        | H   | 52.9                | 38.1                 | -1.1          | 51.8                 | 37.0                  | 80.0                | 60.0                | 28.2           | 23.0            | 376.0       | 60.8        |        |
| 7   | 2497.500        | V   | 50.4                | 35.6                 | -1.1          | 49.3                 | 34.5                  | 80.0                | 60.0                | 30.7           | 25.5            | 121.0       | 281.8       |        |
| 8   | 3177.500        | H   | 44.6                | 31.2                 | 1.4           | 46.0                 | 32.6                  | 80.0                | 60.0                | 34.0           | 27.4            | 146.0       | 175.1       |        |
| 9   | 3277.500        | V   | 43.8                | 32.7                 | 1.6           | 45.4                 | 34.3                  | 80.0                | 60.0                | 34.6           | 25.7            | 400.0       | 59.1        |        |
| 10  | 4000.625        | H   | 43.2                | 32.7                 | 3.1           | 46.3                 | 35.8                  | 80.0                | 60.0                | 33.7           | 24.2            | 112.0       | 44.0        |        |
| 11  | 4759.375        | H   | 40.2                | 26.4                 | 6.4           | 46.6                 | 32.8                  | 80.0                | 60.0                | 33.4           | 27.2            | 223.0       | 124.5       |        |
| 12  | 4770.000        | V   | 39.7                | 26.2                 | 6.5           | 46.2                 | 32.7                  | 80.0                | 60.0                | 33.8           | 27.3            | 100.0       | 268.5       |        |

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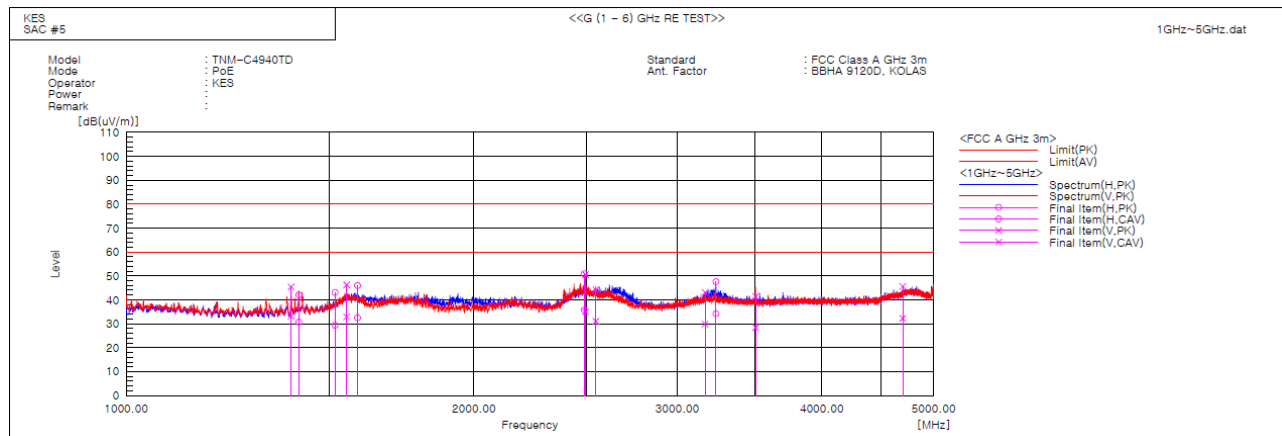
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### PoE Mode



#### Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|---------------------|----------------|-----------------|-------------|-------------|--------|
| 1   | 1388.750        | V   | 50.7                | 38.6                 | -5.3          | 45.4                 | 33.3                  | 80.0                | 60.0                | 34.6           | 26.7            | 221.0       | 105.7       |        |
| 2   | 1410.625        | H   | 47.2                | 35.9                 | -5.2          | 42.0                 | 30.7                  | 80.0                | 60.0                | 38.0           | 29.3            | 107.0       | 64.1        |        |
| 3   | 1516.250        | H   | 47.9                | 34.2                 | -4.8          | 43.1                 | 29.4                  | 80.0                | 60.0                | 36.9           | 30.6            | 100.0       | 215.0       |        |
| 4   | 1551.250        | V   | 51.0                | 37.6                 | -4.7          | 46.3                 | 32.9                  | 80.0                | 60.0                | 33.7           | 27.1            | 100.0       | 317.8       |        |
| 5   | 1585.625        | H   | 50.6                | 37.1                 | -4.6          | 46.0                 | 32.5                  | 80.0                | 60.0                | 34.0           | 27.5            | 374.0       | 201.7       |        |
| 6   | 2491.250        | H   | 52.0                | 36.9                 | -1.1          | 50.9                 | 35.8                  | 80.0                | 60.0                | 29.1           | 24.2            | 157.0       | 53.8        |        |
| 7   | 2497.500        | V   | 51.7                | 36.2                 | -1.1          | 50.6                 | 35.1                  | 80.0                | 60.0                | 29.4           | 24.9            | 391.0       | 276.4       |        |
| 8   | 2550.000        | V   | 45.1                | 31.9                 | -0.8          | 44.3                 | 31.1                  | 80.0                | 60.0                | 35.7           | 28.9            | 226.0       | 195.9       |        |
| 9   | 3170.000        | V   | 41.7                | 28.5                 | 1.4           | 43.1                 | 29.9                  | 80.0                | 60.0                | 36.9           | 30.1            | 385.0       | 271.2       |        |
| 10  | 3239.375        | H   | 46.0                | 32.6                 | 1.6           | 47.6                 | 34.2                  | 80.0                | 60.0                | 32.4           | 25.8            | 400.0       | 162.9       |        |
| 11  | 3506.250        | V   | 39.7                | 26.7                 | 1.8           | 41.5                 | 28.5                  | 80.0                | 60.0                | 38.5           | 31.5            | 121.0       | 25.2        |        |
| 12  | 4700.625        | V   | 39.5                | 26.1                 | 6.2           | 45.7                 | 32.3                  | 80.0                | 60.0                | 34.3           | 27.7            | 145.0       | 38.8        |        |

### ◆ Calculation

Result(PK/CAV) [dB(uV/m)] = (Reading(PK/CAV)[dB(uV)] + c.f[dB(1/m)])

Margin(PK/CAV)[dB] = Limit[dB(uV/m)] - Result(PK/CAV) [dB(uV/m)]

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

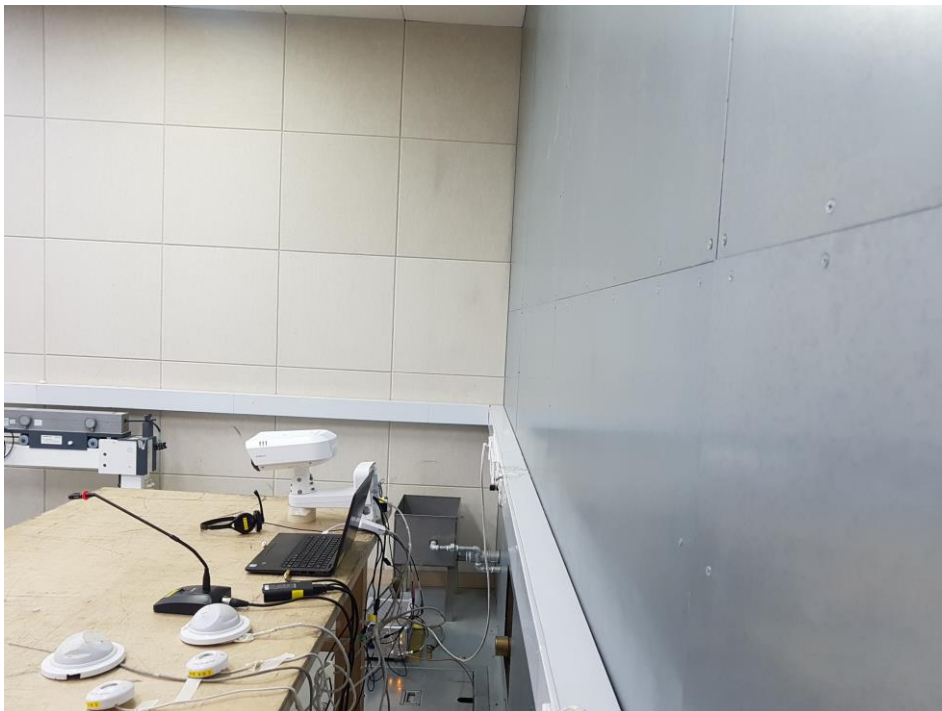
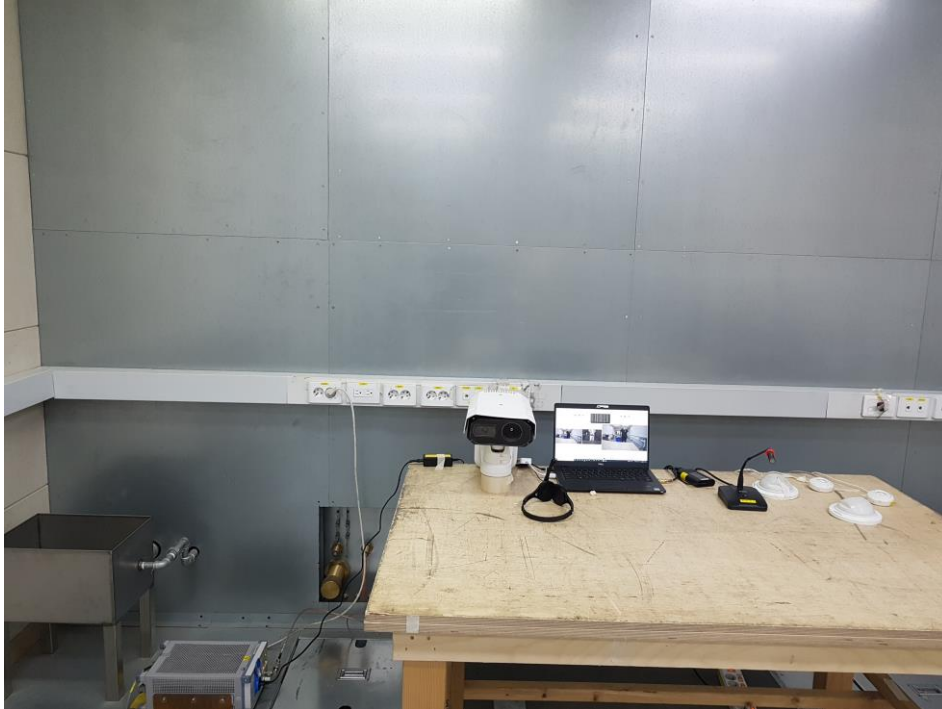
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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## Test Setup Photos and Configuration

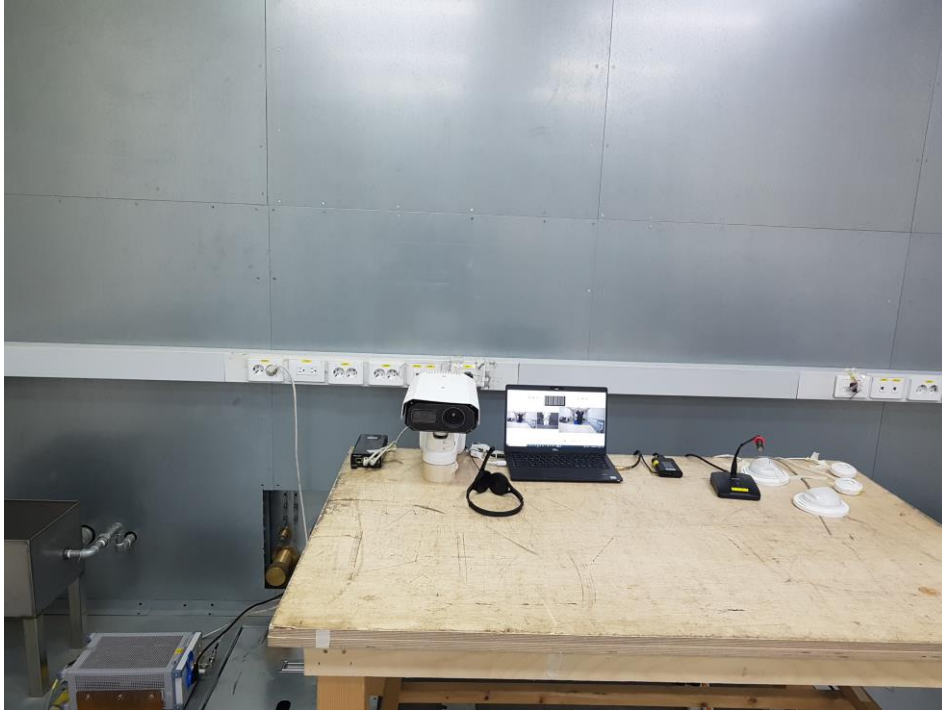
### Conducted Emissions at Mains Power Ports

■ DC Mode



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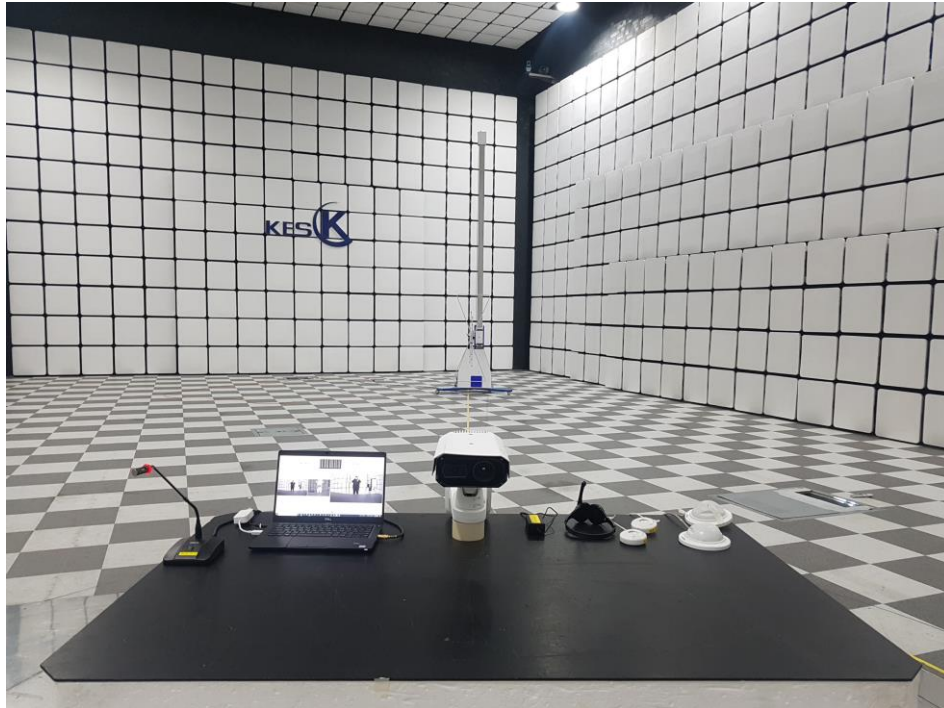
■ PoE Mode



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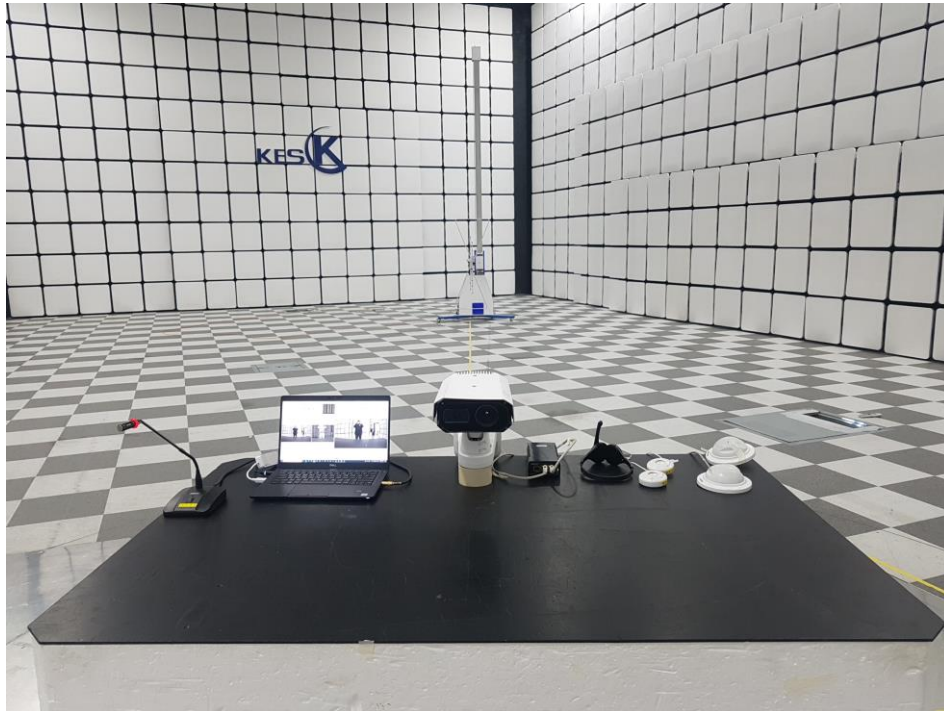
## Radiated Electric Field Emissions(Below 1 GHz)

### ■ DC Mode



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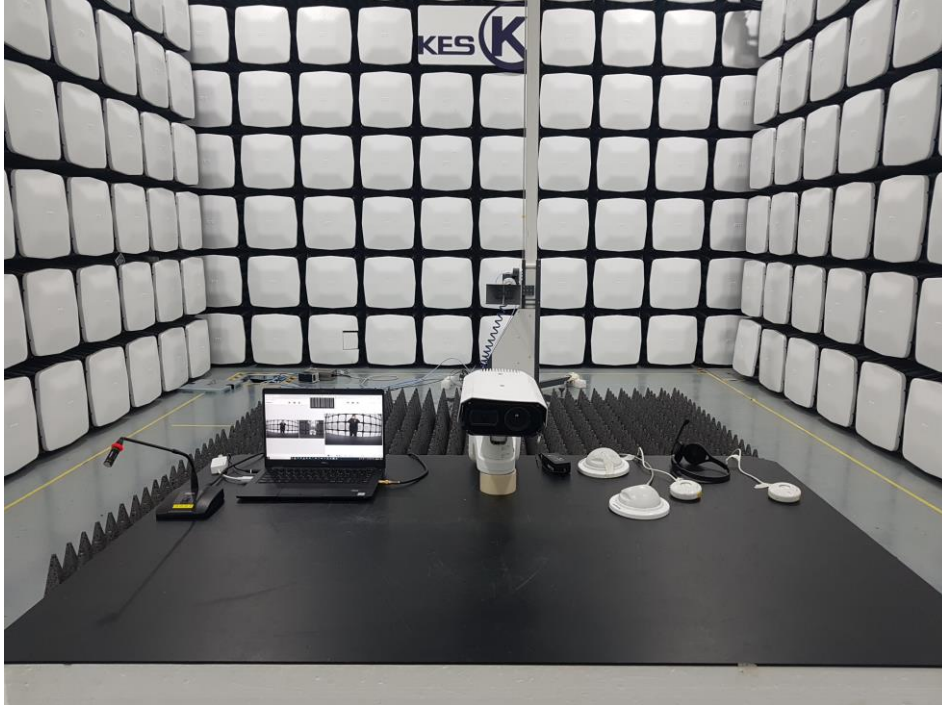
■ PoE Mode



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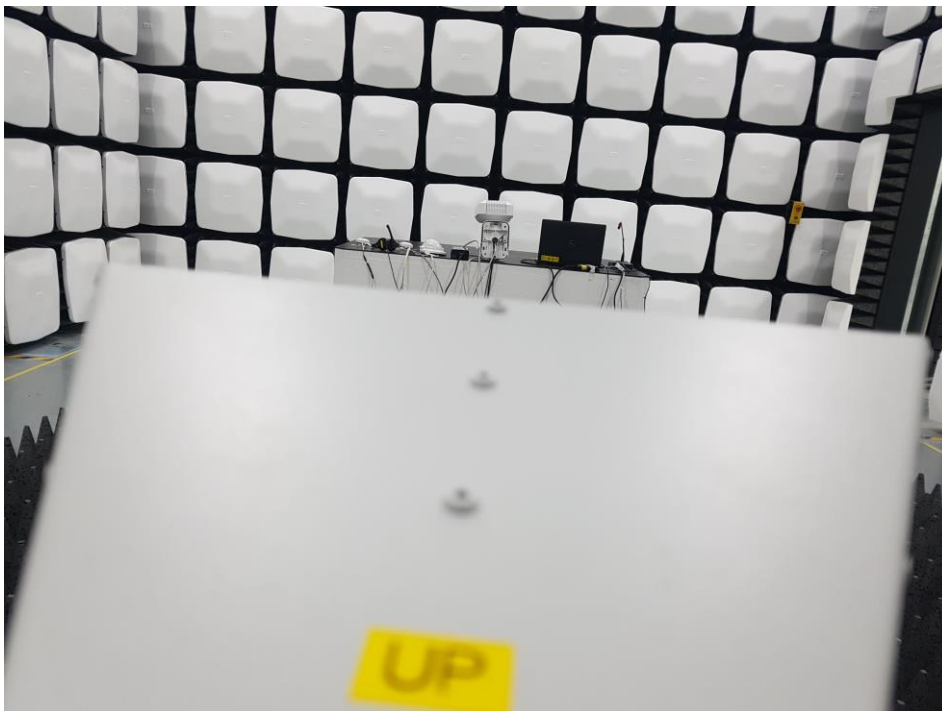
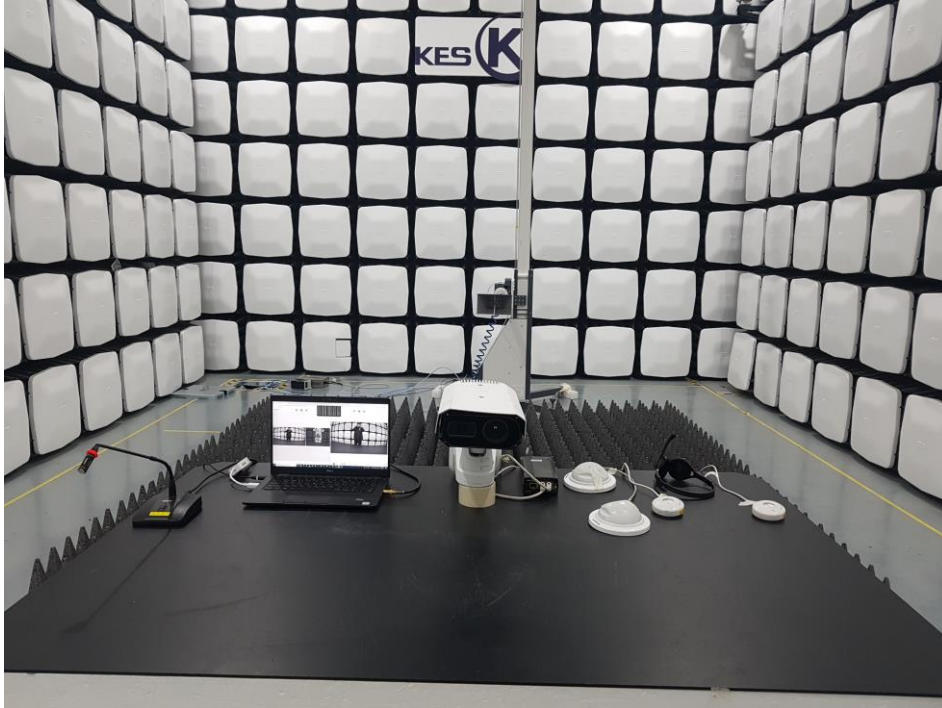
## Radiated Electric Field Emissions(Above 1 GHz)

### ■ DC Mode



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■ PoE Mode



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## EUT External Photographs

(Top)



(Bottom)



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## EUT Internal Photographs

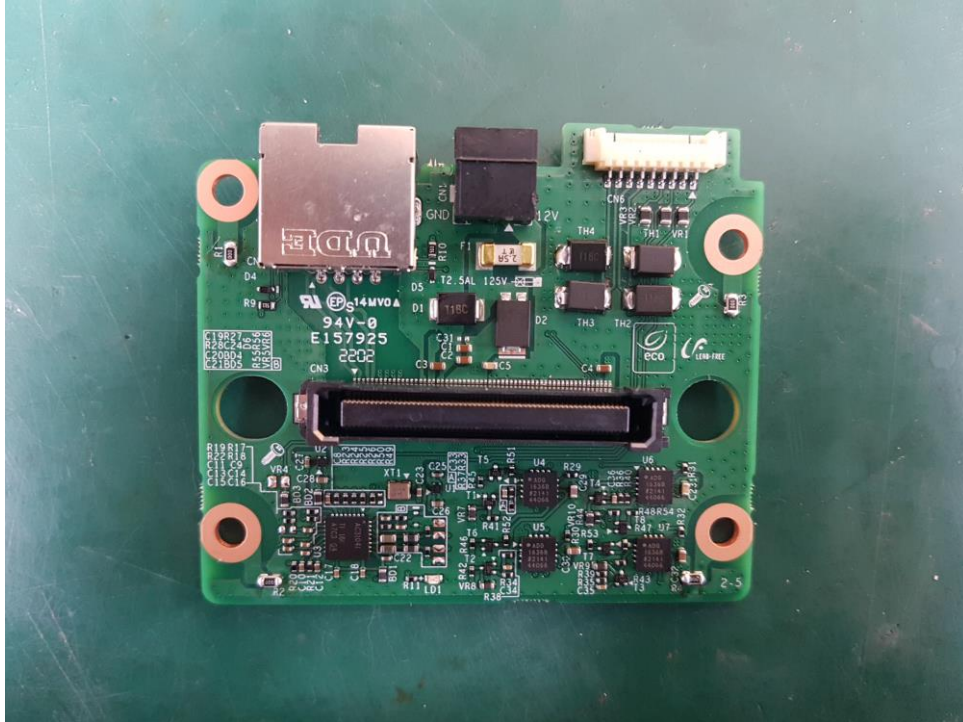
(Internal View)



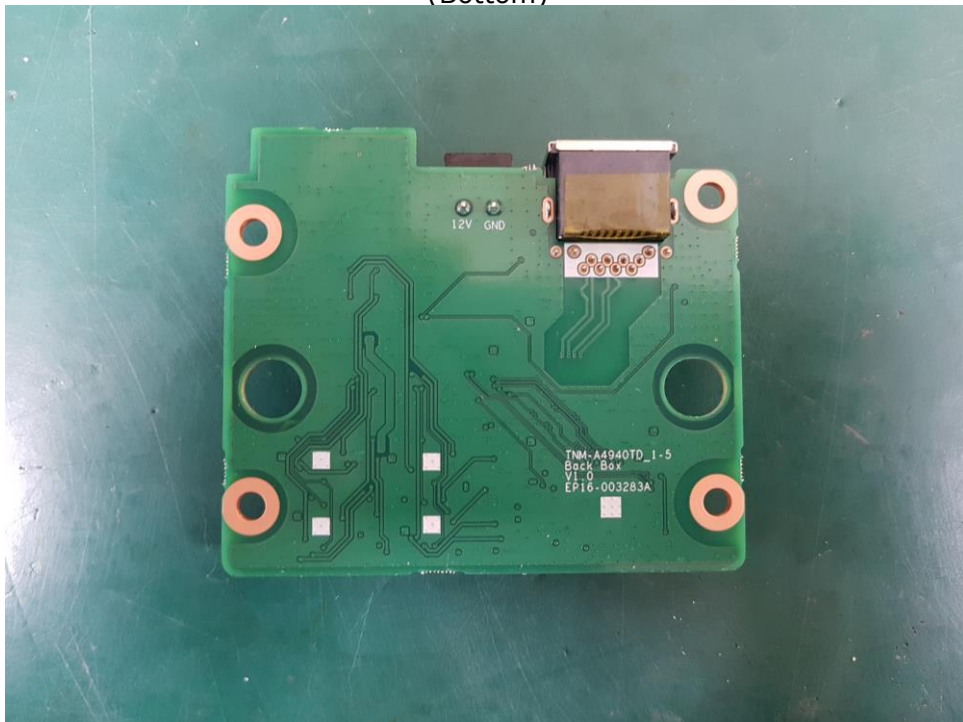
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## EUT Internal View – Board 1

(Top)



(Bottom)



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## EUT Internal View – Board 2

(Top)



(Bottom)



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## EUT Internal View – Board 3

(Top)



(Bottom)



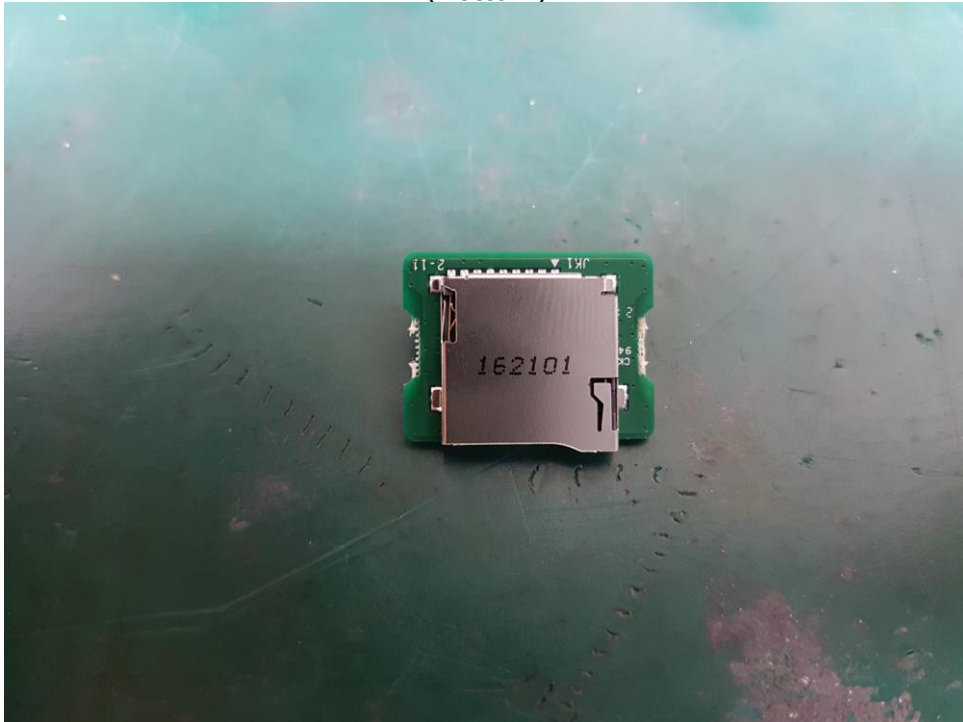
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## EUT Internal View – Board 4

(Top)



(Bottom)



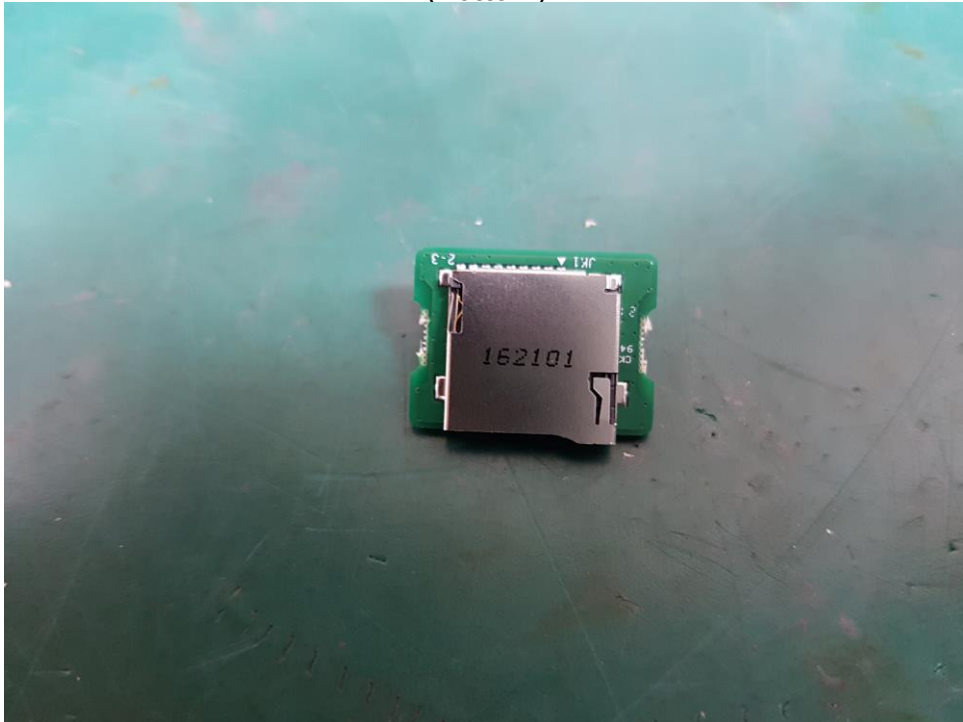
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## EUT Internal View – Board 5

(Top)



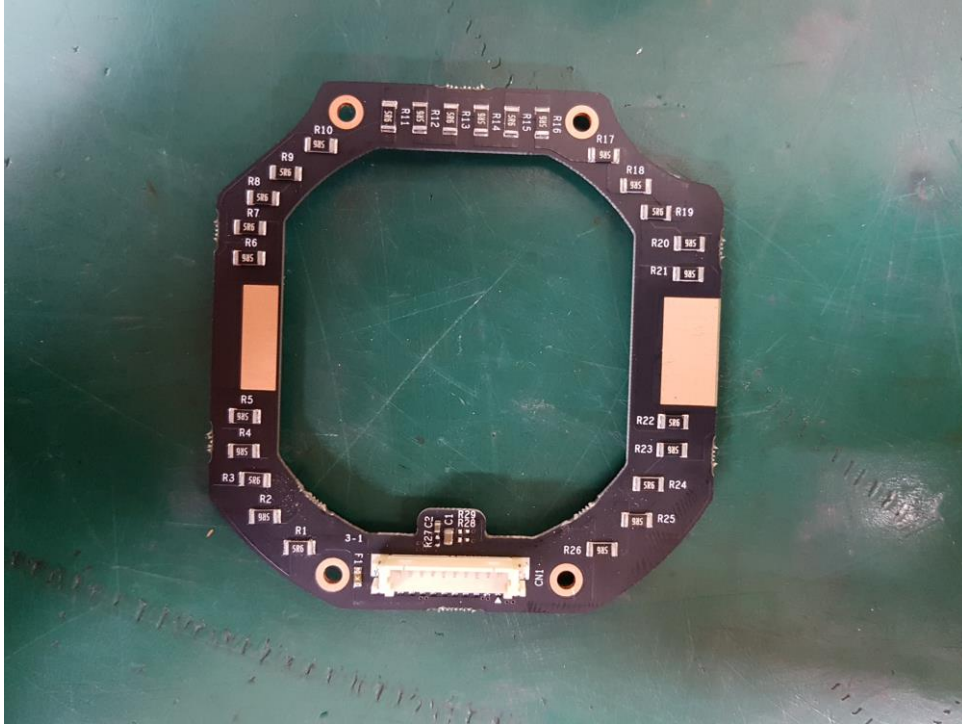
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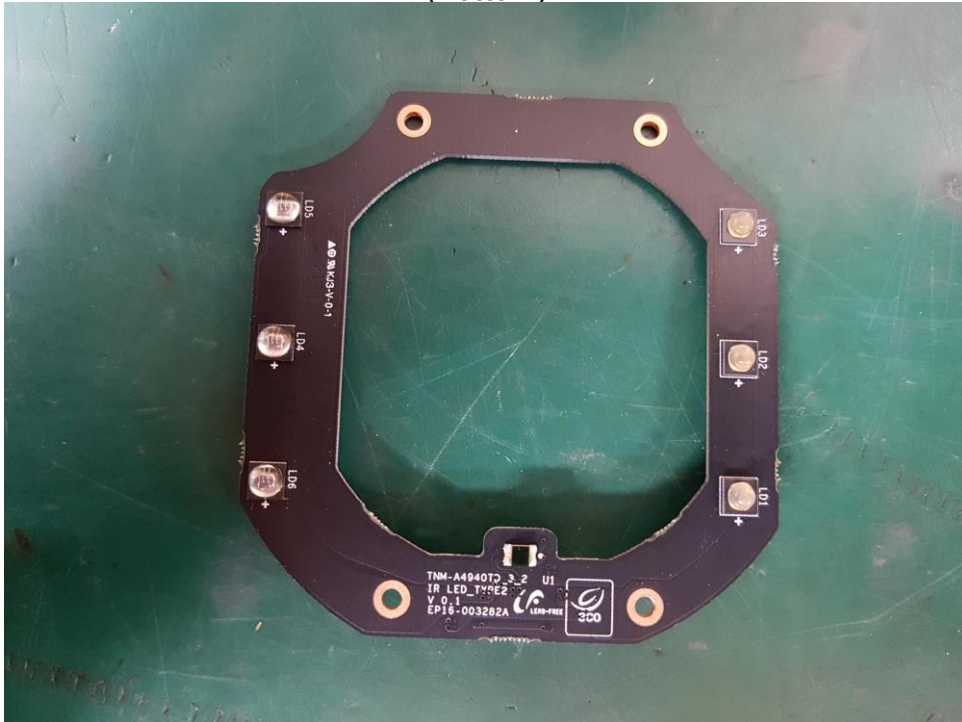
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## EUT Internal View – Board 6

(Top)



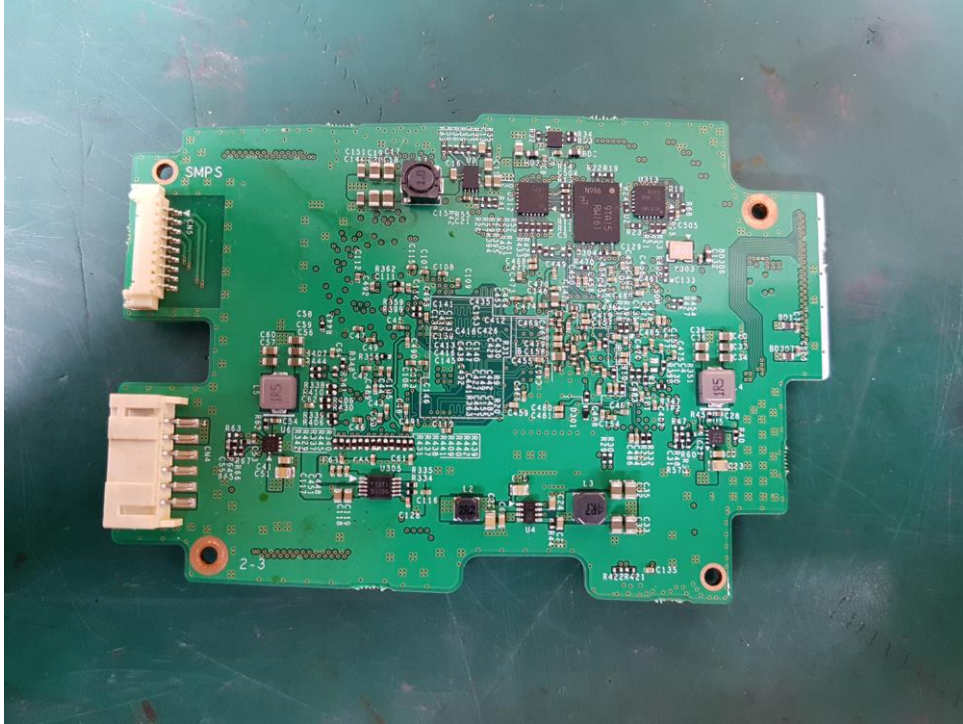
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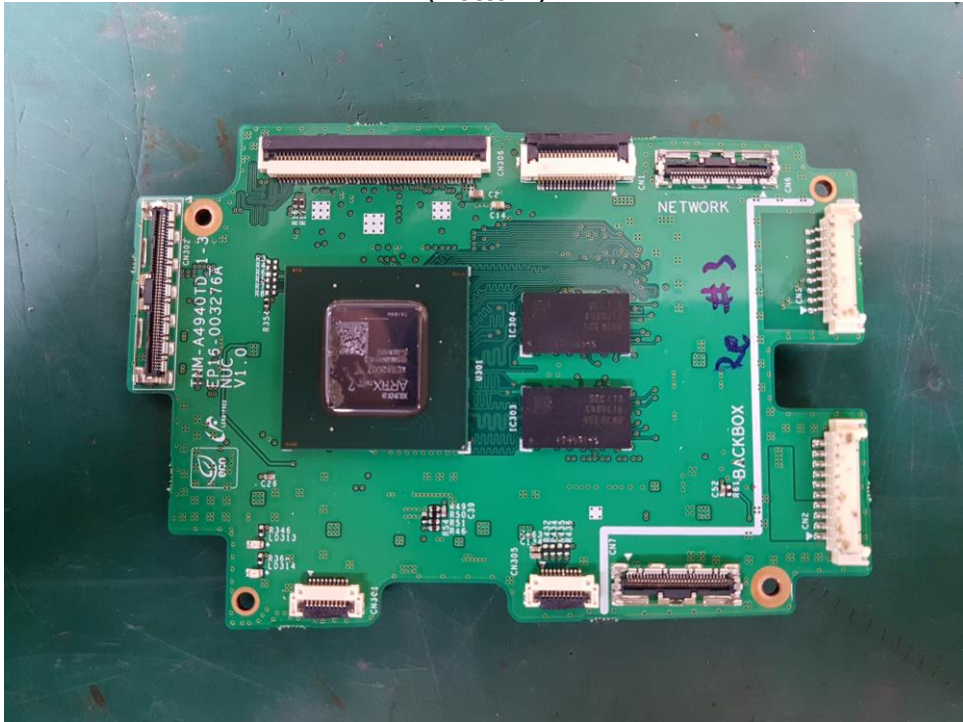
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## EUT Internal View – Board 7

(Top)



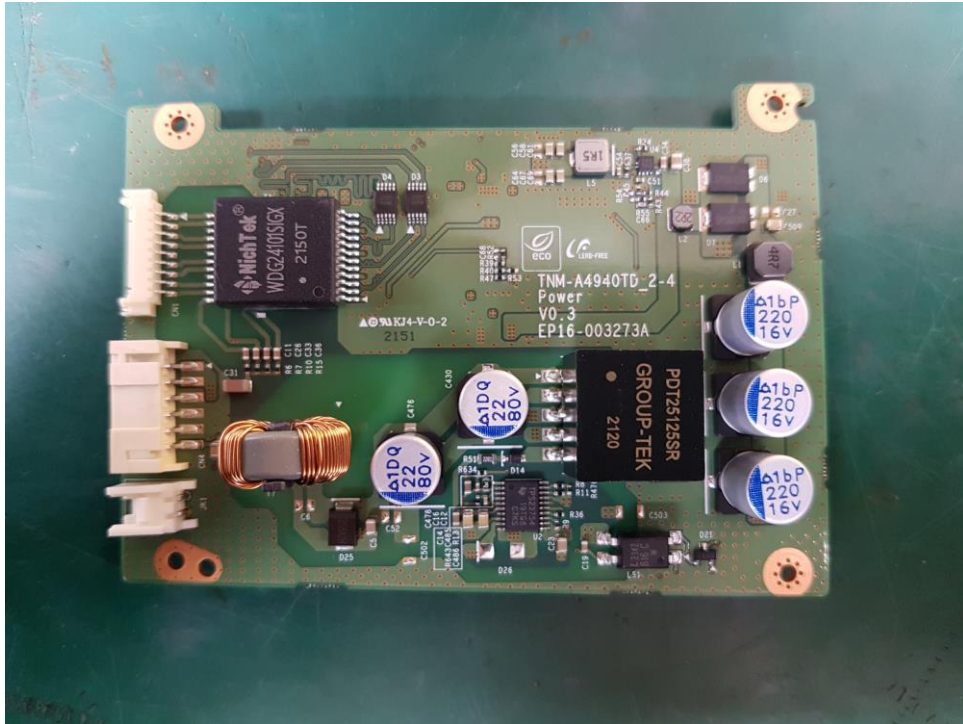
(Bottom)



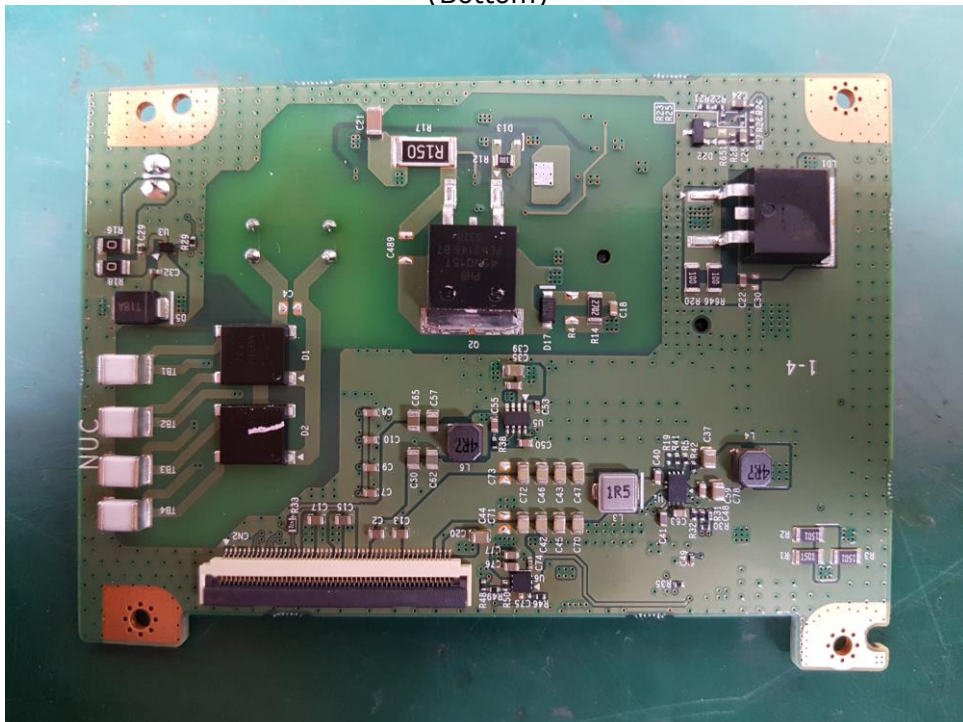
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## EUT Internal View – Board 8

(Top)



(Bottom)



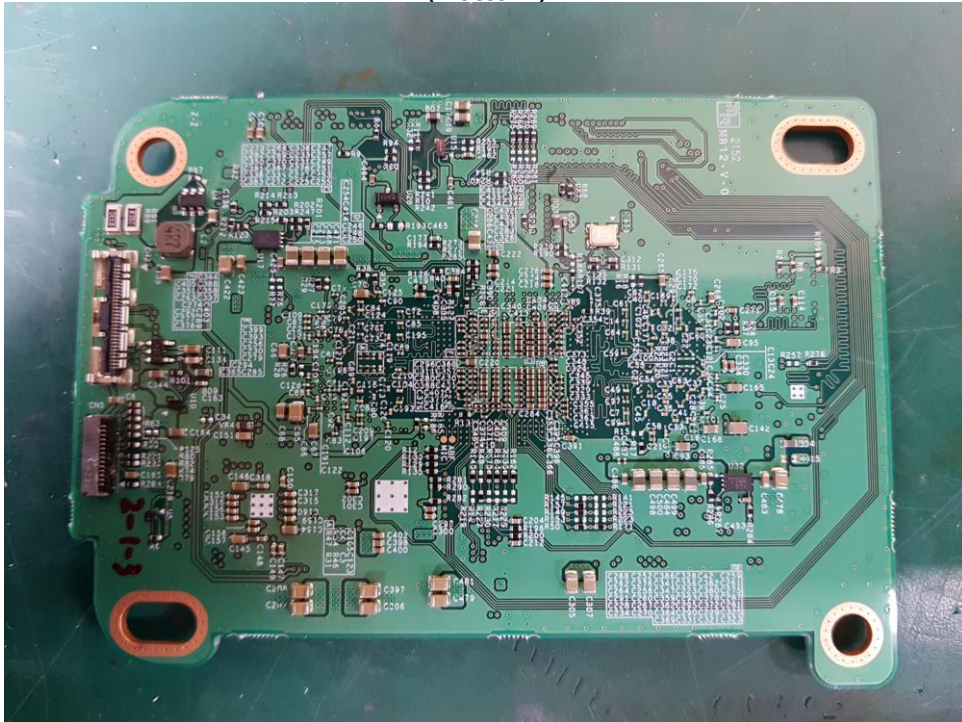
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## EUT Internal View – Board 9

(Top)



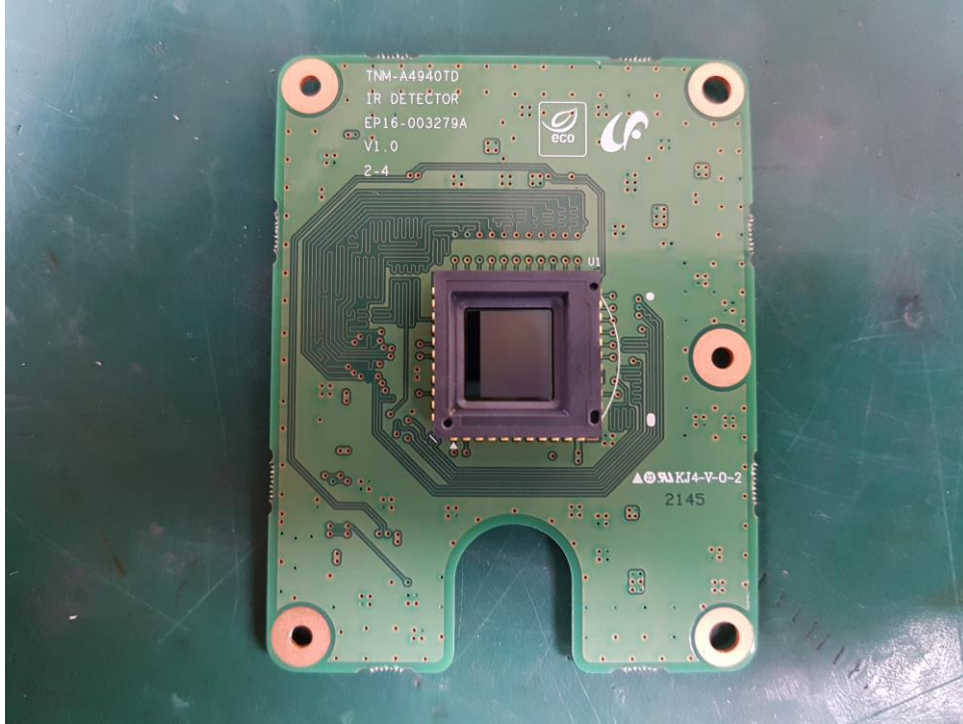
(Bottom)



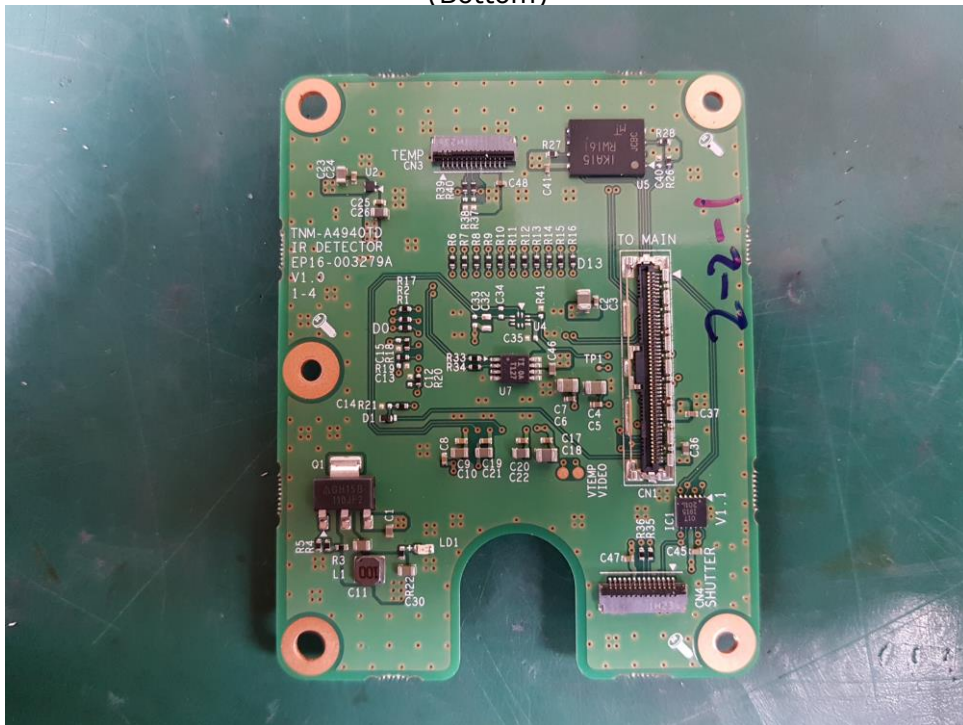
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## EUT Internal View – Board 10

(Top)



(Bottom)



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## EUT Internal View – Lens 1

(Top)



(Bottom)



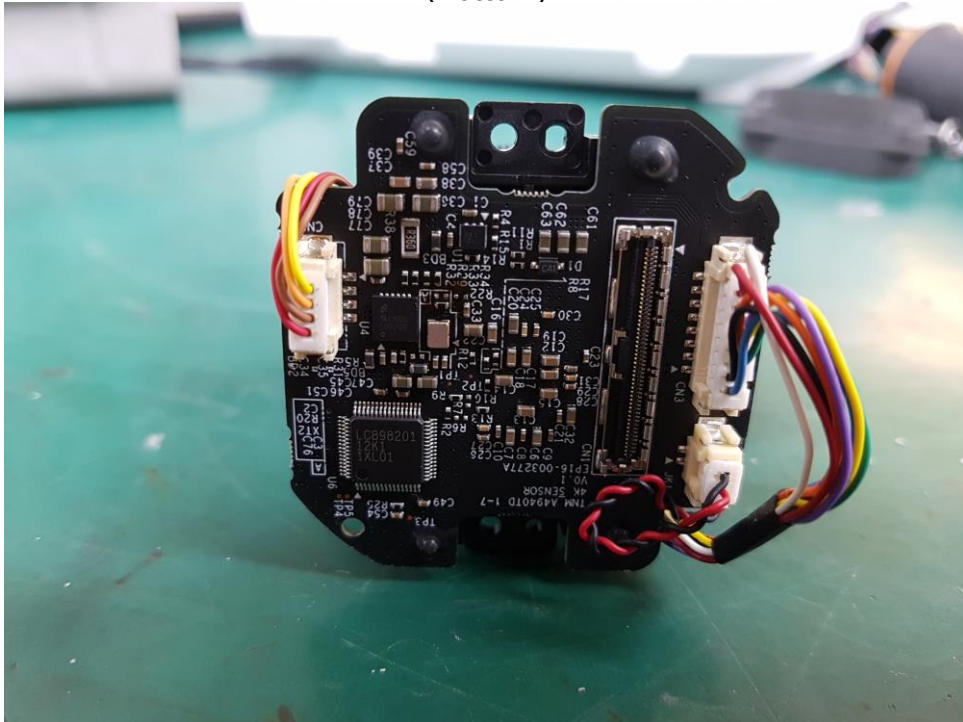
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## EUT Internal View – Lens 2

(Top)

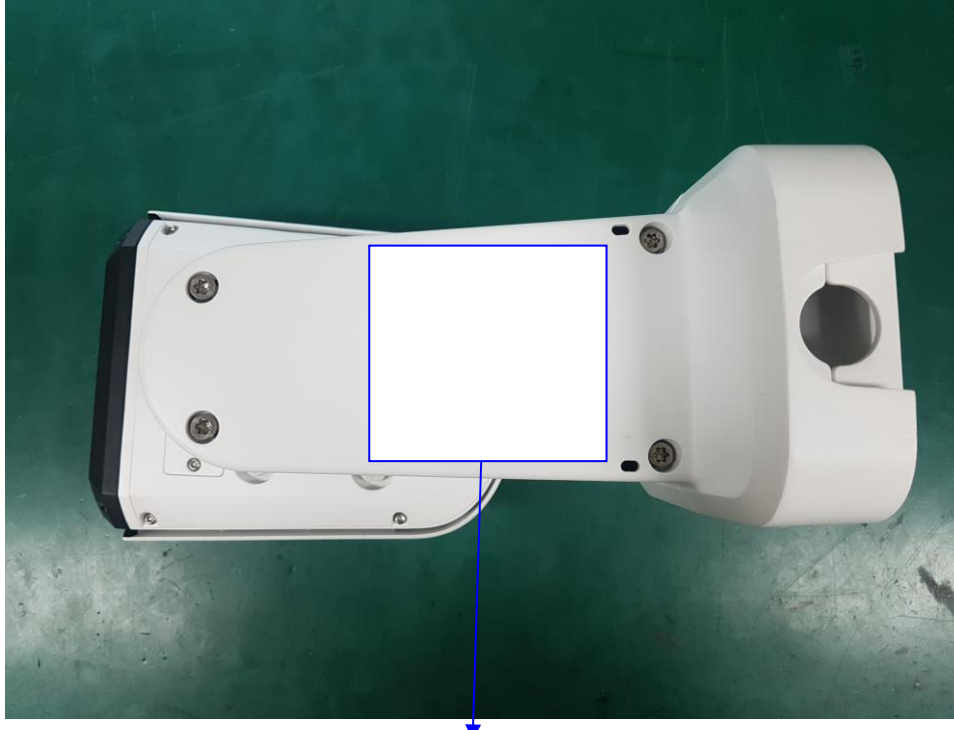


(Bottom)



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## Label Photographs



CAN ICES-3(A) / NMB-3(A)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.